

URI UNDERGRADUATE STUDIES

Scheduling

1994-95
BULLETIN OF
THE UNIVERSITY
OF RHODE ISLAND



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**UNDERGRADUATE
STUDIES**

University of Rhode Island
Kingston, RI 02881-0807
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1994-95 CALENDAR

First Semester

August 25-September 7

Registration period, College of
Continuing Education (CCE)

August 29-September 2

Registration period, Kingston Campus

September 5, Monday

Holiday, Labor Day

September 7, Wednesday

Orientation and academic advising
for new Kingston students

September 8, Thursday

Classes begin, Kingston Campus
and CCE, 8 a.m.

University Faculty Meeting, 3:30 p.m.

September 19, Monday

Final day to drop courses designated
"early drop"

September 21, Wednesday

Final day to add courses and to
add P-F option

*Fees will not be adjusted downward for
Kingston Campus courses dropped
after this date.*

October 10, Monday

Holiday, Columbus Day

October 25, Tuesday

Midsemester

Final day to drop courses and to
change from P-F option to grade.

November 24, Thursday

Thanksgiving recess begins, 8 a.m.

November 28, Monday

Classes resume, 8 a.m.

December 14, Wednesday

Classes end, Kingston Campus

December 15, 17-18

Reading days, Kingston Campus

December 16, 19-23

Final examinations, Kingston Campus

December 21, Wednesday

CCE classes, examinations end

December 27, Tuesday

Final grades due in the Office of
the Registrar, 4 p.m.

Second Semester

January 9-17

Registration period, CCE

January 9-13

Registration period, Kingston Campus

January 16, Monday

Holiday, Martin Luther King's Birthday

January 17, Tuesday

Orientation and academic advising for
new Kingston students

January 18, Wednesday

Classes begin, Kingston Campus
and CCE, 8 a.m.

January 27, Friday

Final day to drop courses designated
"early drop"

January 31, Tuesday

Final day to add courses and to
add P-F option

*Fees will not be adjusted downward for
Kingston Campus courses dropped
after this date.*

February 20, Monday

Classes will not meet

February 22, Wednesday

Monday classes meet

March 7, Tuesday

Midsemester

Final day to drop courses and to
change from P-F option to grade

March 13, Monday

Spring recess begins, 8 a.m.

March 20, Monday

Classes resume, 8 a.m.

May 3, Wednesday

Classes end, Kingston Campus

May 4, 6-7

Reading days, Kingston Campus

May 5, 8-12

Final examinations, Kingston
Campus

May 10, Wednesday

CCE classes, examinations end

May 15, Monday

Final grades due in the Office of
the Registrar, 4 p.m.

May 21, Sunday

Undergraduate Commencement

Summer Session 1995

May 20-June 21

First five-week session

June 24-July 26

Second five-week session

Changes in the academic calendar
due to major storms, labor unrest, or
other circumstances may be made
when it is in the best interests of the
institution, and without prior notice
to the students.

THE UNIVERSITY



The University of Rhode Island is a medium-sized state university in the southern part of Rhode Island in the village of Kingston. In part because of its unique location near the ocean and six miles from Narragansett Bay, the University has developed strong marine programs and has been designated one of the national Sea Grant colleges.

The University enrolls about 11,500 undergraduate and 3,600 graduate students, and has a full-time teaching faculty of approximately 720.

Mission Statement. The University of Rhode Island is rooted firmly in the tradition of America's unique land-grant institutions—universities that exist to expand and transmit knowledge, and to foster its application in the daily life of the nation.

As the state's flagship institution of higher learning, the University has three major responsibilities: to provide traditional as well as innovative opportunities for education at the undergraduate and graduate levels; to pursue research and other scholarly and creative activities; and to serve the unique needs of the people of Rhode Island by making knowledge and information readily available to individual citizens; to community groups, to school and educational agencies, and to business, industry, labor, and government.

At the heart of this University, like its counterparts across the nation, there is a strong core of traditional academic disciplines, such as history, physics, and economics. These are not only principal subjects of teaching and research; they also provide the foundation for all specialized, professional, and applied areas of study.

One component of the University's approach to higher learning is the close student-teacher relationship and the consequent concern for the individual person. A low student-to-faculty ratio enhances the success of this vital component of the University's mission.

Because of its commitment to provide access for academically qualified and motivated students of all ages, the University maintains a variety of both traditional and nontraditional learning environments. Students who are either part time, disabled, members of a minority group, working while pursuing an education, or somewhat older than traditional students are served through a wide range of facilities in Kingston, as well as extensive academic and student services at the University's College of Continuing Education in Providence.

Campuses. The University has a spacious rural campus 30 miles south of Providence in the northeastern metropolitan corridor between New York and Boston. The center of campus is a quadrangle of handsome, old granite buildings surrounded by newer academic buildings, student residence halls, and fraternity and sorority houses. On the plain below Kingston Hill are gymnasiums, athletic fields, tennis courts, a freshwater pond, and agricultural fields.

In addition to the Kingston Campus, the University has three other campuses. The 165-acre Narragansett Bay Campus, six miles to the east overlooking the West Passage of Narragansett Bay, is the site of the Graduate School of Oceanography. The College of Continuing Education has a building in downtown Providence. In the western section of the state, 20 miles from Kingston, is the W. Alton Jones Campus. Its 2,300 acres of woods, fields, streams, and ponds is the site of environmental education, research, and conference facilities.

History. The University was chartered as the state's agricultural school in 1888. The Oliver Watson farm was purchased as a site for the school, and the old farmhouse, now restored, still stands on the campus. The school became the Rhode Island College of Agriculture and Mechanic Arts in 1892, and the first class of 17 members was graduated two years later.

The Morrill Act of 1862 provided for the sale of public lands. Income from these sales was to be used to create at least one college in each state with the principal purpose of teaching agriculture and mechanic arts. From this grant of land comes the term "land grant," which applied to the national system of state colleges. In a later adaptation of the concept, federal funds given to colleges for marine research and extension are called "sea grants."

In 1909 the name of the college was changed to Rhode Island State College, and the program of study was revised and expanded. In 1951 the college became the University of Rhode Island by an act of the General Assembly. The Board of Governors for Higher Education appointed by the governor became the governing body of the University in 1981. A historical outline can be found in the Appendix.

Programs of Study

Undergraduate Study. All programs aim at a balance of studies of the natural and social sciences, the humanities, and professional subjects. The courses and programs of study have been approved by national accrediting agencies and are accepted for credit by other approved institutions of higher education (see "Programs and Requirements").

Undergraduate students can earn the following degrees:

- Bachelor of Arts
- Bachelor of Science
- Bachelor of Fine Arts
- Bachelor of Landscape Architecture
- Bachelor of Music
- Bachelor of General Studies
- (College of Continuing Education only)

All freshmen who enter the University to earn a bachelor's degree are first enrolled in University College (see page 32). Undergraduates have a wide choice of programs from which to choose a major, and the advising program in University College provides help in making this decision and in choosing appropriate courses.

Undergraduate Degrees

College of Arts and Sciences

Anthropology: B.A.
 Applied Quantitative Economics: B.S.
 Applied Sociology: B.S.
 Art: B.A., B.F.A.
 Biology: B.A.
 Botany: B.S.
 Chemistry: B.A., B.S.
 Chemistry and Chemical Oceanography: B.S.
 Classical Studies: B.A.
 Clinical Laboratory Science: B.S.
 Communication Studies: B.A.
 Comparative Literature: B.A.
 Computer Science: B.S.
 Economics: B.A.
 English: B.A.
 French: B.A.
 Geology: B.A., B.S.
 Geology and Geological Oceanography: B.S.
 German: B.A.
 History: B.A.
 Italian: B.A.
 Journalism: B.A.
 Latin American Studies: B.A.
 Linguistics: B.A.
 Marine Affairs: B.A.
 Mathematics: B.A., B.S.
 Microbiology: B.S.
 Music: B.A., B.Mus.
 Philosophy: B.A.
 Physics: B.A., B.S.
 Physics and Physical Oceanography: B.S.
 Political Science: B.A.
 Psychology: B.A.
 Russian: B.A.
 Sociology: B.A.
 Spanish: B.A.
 Statistical Science: B.S.
 Theatre: B.A., B.F.A.
 Urban Affairs: B.A.
 Women's Studies: B.A.
 Zoology: B.S.

College of Business Administration

Accounting: B.S.
 Finance: B.S.
 General Business Administration: B.S.
 Management: B.S.
 Management Science and Information Systems: B.S.
 Marketing: B.S.

College of Engineering

Biomedical Electronics Engineering: B.S.*
 Chemical Engineering: B.S.
 Chemical and Ocean Engineering: B.S.
 Civil Engineering: B.S.
 Computer Engineering: B.S.
 Electrical Engineering: B.S.
 Industrial Engineering: B.S.
 Materials Engineering: B.S.
 Mechanical Engineering: B.S.
 Ocean Engineering: B.S.

College of Continuing Education

Bachelor of General Studies: B.G.S.

College of Human Science and Services

Communicative Disorders: B.S.
 Consumer Affairs: B.S.
 Dental Hygiene: B.S.
 Education (Elementary and Secondary): B.S.
 Home Economics: B.S.
 Human Development and Family Studies: B.S.
 Human Science and Services: B.S.
 Physical Education: B.S.
 Textiles, Fashion Merchandising, and Design: B.S.
 Textile Marketing: B.S.

College of Nursing

Nursing: B.S.

College of Pharmacy

Pharmacy: B.S. (five years)
 Pharm.D. (six years)

College of Resource Development

Animal Science and Technology: B.S.
 Aquaculture and Fishery Technology: B.S.
 Dietetics: B.S.
 Environmental Management: B.S.
 Food Science and Nutrition: B.S.
 Landscape Architecture: B.L.A.
 Plant Science: B.S.
 Resource Economics and Commerce: B.S.
 Soil and Water Resources: B.S.
 Urban Affairs: B.S.
 Urban Horticulture and Turfgrass Management: B.S.
 Wildlife Biology and Management: B.S.

Graduate Degrees

Accounting: M.S.
 Applied Mathematical Sciences: Ph.D.
 • Applied Mathematics
 • Applied Probability
 • Computer Science
 • Operations Research
 • Statistics
 Audiology: M.A., M.S.
 Biochemistry and Biophysics: M.S.
 Biological Sciences: Ph.D.
 • Biochemistry and Biophysics
 • Botany
 • Fisheries, Animal and Veterinary Science
 • Food Science and Nutrition
 • Microbiology
 • Natural Resources
 • Plant Pathology
 • Plant Science
 • Zoology
 Botany: M.S.
 Business Administration: M.B.A., Ph.D.
 Chemical Engineering: M.S., Ph.D.
 Chemistry: M.S., Ph.D.
 Civil and Environmental Engineering: M.S., Ph.D.
 Clinical Laboratory Science: M.S.
 Community Planning: M.C.P.
 Comparative Literature: M.A.
 Computer Science: M.S.

Economics—Marine Resources: Ph.D.
 Education: M.A.

- Adult Education
- Education Research
- Elementary Education
- Reading Education
- Science Education
- Secondary Education

Electrical Engineering: M.S., Ph.D.

English: M.A., Ph.D.

Entomology: M.S.

Fisheries, Animal and Veterinary Science: M.S.

Food Science and Nutrition: M.S.

French: M.A.

Geology: M.S.

History: M.A.

Human Development and Family Studies: M.S.

- Human Development and Family Studies
- Marriage and Family Therapy
- College Student Personnel

Labor and Industrial Relations: M.S.

Library and Information Studies: M.L.I.S.

Manufacturing Engineering: M.S.

Marine Affairs: M.A., M.M.A.

Mathematics: M.S., Ph.D.

Mechanical Engineering and Applied Mechanics: M.S., Ph.D.

Medicinal Chemistry: M.S.

Microbiology: M.S., Ph.D.

Music: M.M.

Natural Resources: M.S.

Nursing: M.S., Ph.D.

Ocean Engineering: M.S., Ph.D.

Oceanography: M.S., Ph.D.

Pharmaceutical Sciences: Ph.D.

- Medicinal Chemistry
- Pharmaceutics
- Pharmacognosy
- Pharmacology and Toxicology

Pharmaceutics: M.S.

Pharmacognosy: M.S.

Pharmacology and Toxicology: M.S.

Pharmacy Administration: M.S.

Philosophy: M.A.

Physical Education: M.S.

Physical Therapy: M.S.

Physics: M.S., Ph.D.

Plant Science: M.S.

Political Science: M.A.

Psychology (School): M.S.

Psychology: Ph.D.

- Clinical
- Experimental
- School

Public Administration: M.P.A.

Resource Economics: M.S.

Spanish: M.A.

Speech-Language Pathology: M.A., M.S.

Statistics: M.S.

Textiles, Fashion Merchandising, and Design: M.S.

Zoology: M.S.

*Admissions suspended.

Graduate Study. Study at the graduate level leads to the master's degree in 56 areas of study and the degree of Doctor of Philosophy in 32. Students may earn the following degrees:

- Master of Arts
- Master of Science
- Master of Business Administration
- Master of Community Planning
- Master of Library and Information Studies
- Master of Marine Affairs
- Master of Music
- Master of Public Administration
- Doctor of Philosophy

Graduate School. Students with a bachelor's degree from this University or from another with equivalent requirements and accreditation may be admitted for graduate study, providing that their credentials meet the standards set by the Graduate School and by the department in which they wish to study, and that facilities for study are available in their field of interest. Among the standards required for admission are an approximate undergraduate average of B or better and, where required, satisfactory scores on a nationally administered examination.

Graduate degrees are listed in the relevant college's chapter within this bulletin. For complete information on graduate study, consult the *Graduate Bulletin*. The *Graduate Bulletin* and a self-managed application packet are available from: Dean of the Graduate School, University of Rhode Island, Quinn Hall, Kingston, RI 02881-0809. Further information can be obtained from the chairperson of the appropriate department. The completed application package must be mailed to the department or program to which admission is sought, and must be accompanied by a nonrefundable application fee of \$30 (for in-state residents) or \$45 (for out-of-state residents).

Applicants from foreign countries must complete the Test of English as a Foreign Language (TOEFL) with a minimum score of 550. All inquiries from international students concerning cost of living, housing, etc., should be directed to the Office of International Students and Scholars.

The usual deadlines for receipt of completed applications from international students are February 1 for September and Summer Session admission, and July 15 for

January admission. For U.S. applicants, the usual deadlines are April 15 for summer admission, July 15 for fall admission, and November 15 for spring admission. See the *Graduate Bulletin* for those programs that have earlier application deadlines.

The Graduate School of Library and Information Studies on the main campus offers study leading to the Master of Library and Information Studies degree. Students in undergraduate and other graduate programs may, with the approval of their advisor and the GSLIS faculty, enroll in library courses that relate to their studies.

The Graduate School of Oceanography on the Narragansett Bay Campus offers study leading to the Master of Science and Doctor of Philosophy degrees in the areas of biological, chemical, geological, and physical oceanography. Interested undergraduates may take a 400-level general survey course qualifying for General Education credits as well as certain 500-level courses in the oceanography core curriculum. In addition, qualified undergraduates are eligible for a 100- or 400-level, semester-long, full-time program of laboratory and field research working with faculty members of the Graduate School of Oceanography. Insofar as possible, the program is tailored to the interests of the student and can range from deep-sea geology to coastal zone planning. There are also three undergraduate programs in oceanography at the University. One leads to a bachelor's degree in physics and physical oceanography, another to a bachelor's degree in chemistry and chemical oceanography, and a third to a bachelor's degree in geology and geological oceanography.

The Narragansett Bay Campus has about 4,000 feet of shorefront and docking facilities for its fleet of research vessels, the largest of which is a 185-foot oceangoing research ship, *Endeavor*.

More than 20 permanent buildings house offices, laboratories, and special scientific facilities on the Bay Campus. They include the Pell Marine Science Library, a 12,000-square-foot research aquarium, a towing test tank, and a unique facility that permits controlled ecosystems experiments. The two-megawatt research reactor of the Rhode Island Nuclear Science Center is also located there.

Academic Services

University Libraries. The library collection of 1,040,000 bound volumes and 1,360,000 microforms is housed in the University Library in Kingston, at the College of Continuing Education in Providence, and in the Pell Marine Science Library on the Narragansett Bay Campus. The latter was designated the National Sea Grant Depository in 1971.

The University Library, which holds the bulk of the collection, has open stacks that provide direct access to books, periodicals, documents, maps, microforms, and audiovisual materials. The Special Collections Department collects and maintains rare books, manuscripts, the University archives, and a variety of special interest materials. Service hours at the other libraries vary, but the University Library provides full reference, bibliographic, and circulation services during most of the 90 hours a week it is open. The library is a member of the HELIN Consortium, which consists of five Rhode Island academic libraries; besides URI, it includes the Community College of Rhode Island, Providence College, Rhode Island College, and Roger Williams University. The libraries share an on-line public access catalog and offer reciprocal services.

Academic Computer Center. The Academic Computer Center (ACC) provides computational resources needed by the University community for instruction and research. Located in Tyler Hall on the Kingston Campus, the ACC maintains central computing facilities, student microcomputing resources, and the campus high-speed network. The ACC provides a variety of services to support these facilities and assists the campus community in their use. The computer network and related services have been expanding steadily since the center opened in 1959, and now a majority of the students, faculty, and staff use these resources. All students are entitled to a computer account which enables them to use ACC facilities, including access to worldwide electronic mail services.

The center has an IBM ES/9000 Model 210 VF mainframe computer running the VM/CF operating system to provide computing support for interactive, batch, and client-server processor modes. A full complement of programming languages



and packages is available. In addition, an IBM RISC System/6000 Power Server 560 running AIX 3.2.5 is available for Geographic Information System and computer-intensive applications. Extensive facilities for computer graphics are also offered using both video display facilities and a CalComp 58436 color electrostatic plotter for visualization. Several hundred personal computers, workstations, and terminals are located in public work areas and private offices. These devices are connected to the University Ethernet network, which provides access to the ACC systems and remote independent computers. Also available are extensive dial-up facilities as well as external network access to the INTERNET, BITNET, and the Rhode Island State Network. URI is also a Smart Node member of the Cornell National Supercomputer Facility, with both research and educational access to supercomputer facilities.

The ACC provides facilities management services for campus microcomputer laboratories featuring IBM PS/2s, Apple Macintoshes, and UNIX workstations. Numerous software application packages are available. The microcomputer laboratories are available for faculty research, teaching, and general student use. Eight computer classrooms are available.

Writing Center. The Writing Center provides assistance to anyone in the University community who needs help with any phase of writing a paper. The Writing Center is staffed by Department of English College Writing Program faculty and Department of English graduate students. The Writing Center also serves as a practicum facility for WRT/EDC 435 students. Tutoring is provided by appointment on an individual basis, but walk-in appointments are sometimes available.

The center helps students become better writers and provides an environment in which writers can write with paper and pencil or on one of the center's Macintosh computers. Students can use an array of software, including word-processing software, to produce their work with support from center staff. The computers and software in the Writing Center are compatible with those in other laboratories campus-wide.

The center is open approximately 40 hours per week, including daytime and evening hours. Appointments for tutoring can be made by calling 401-792-4690, or by visiting the center in Room 313, Independence Hall.

Research and Extension

Within the state system of higher education, the University has the major responsibility for graduate education, which is interdependent with a strong program of research. There are active research programs in all departments of the University. Support comes from foundations, commercial firms, federal and state agencies, and the University. In 1993, the University accepted awards totaling \$44,911,011 to support specific research, teaching, and service projects.

Applications for research grants are approved by the University's vice provost for research, who is the liaison officer for the president, the provost, the business manager, the academic deans, the Research Committee, and the faculty in matters pertaining to research. The University's Research Office provides assistance to the University research community in all aspects of research and in the preparation of proposals.

In addition to research conducted in the various departments, the University has established a number of research, extension, and technology transfer programs in specially defined areas; these are described in detail in the Appendix.

The University distributes the results of its research in publications available to the public. These include publications from the Rhode Island Sea Grant College Program, Cooperative Extension, and the Agricultural Experiment Station.

The University also publishes through the University Press of New England, of which it is a member. Manuscripts originating on the seven member campuses and elsewhere are published as determined by the director and editorial board of the University Press.

The University Community

In addition to the student body, the University community is made up of faculty, administration, staff, and alumni. The *Faculty Senate* represents the faculty and was authorized in 1960 by the general faculty to conduct the business assigned to the faculty by law or by the Board of Governors for Higher Education. The *Graduate Council* is the representative body for the graduate faculty and determines the academic policies for graduate study. The office of *University Ombud* investigates complaints from students, faculty members, and administrative personnel that they have been unfairly dealt with in the normal channels of the administrative process. The ombud is a tenured or emeritus member of the faculty appointed by the Faculty Senate and is assisted by a student appointed by the President.

The *Instructional Development Program* (IDP) exists to help faculty members in their teaching responsibilities. Faculty members who want to increase their teaching effectiveness by improving their skills or developing new ones may work individually with IDP staff and participate in various workshops, colloquiums, and seminars on teaching.

The voice of the alumni is heard through the *Alumni Association*, which includes all those who have attended the University for two semesters or more and whose class has graduated. The organization, with about 70,000 members, promotes the interests of the University and maintains the ties of alumni with their alma mater through programs, services, and the publication of a magazine. An annual fund drive provides scholarship and other University aid.

The University receives less than half of its support from the state. The balance comes from student fees and tuition, fed-

eral grants, and auxiliary enterprises and other miscellaneous sources. The *University of Rhode Island Foundation* encourages and administers gifts from private sources to build a substantial endowment for continuing support of the University. It is concerned with the support of University activities for which adequate provision is not ordinarily made by appropriations from public funds.

Affirmative Action and Nondiscrimination. The University of Rhode Island prohibits discrimination on the basis of race, sex, religion, age, color, creed, national origin, disability, or sexual orientation, and discrimination against disabled and Vietnam era veterans in the recruitment, admission, or treatment of students, the recruitment, hiring, or treatment of faculty and staff, and the operation of its activities and programs. This is in compliance with state and federal laws, including Titles VI and VII of the Civil Rights Act of 1964, as amended, Title IX of the 1972 Education Amendments to the Higher Education Act, Executive Order 11246, as amended, Sections 503/504 of the Rehabilitation Act of 1973, as amended, Section 402 of the Vietnam Era Readjustment Assistance Act of 1974, and the Americans with Disabilities Act of 1990.

With regard to scholarships and commissioning into the armed forces, the ROTC program, in accordance with Department of Defense policy, does not comply with the University's policy on nondiscrimination based on sexual orientation.

Most buildings on campus are architecturally available to the disabled, and provision is made to ensure that no student is prevented from pursuing a course of study because of restricted access to buildings.

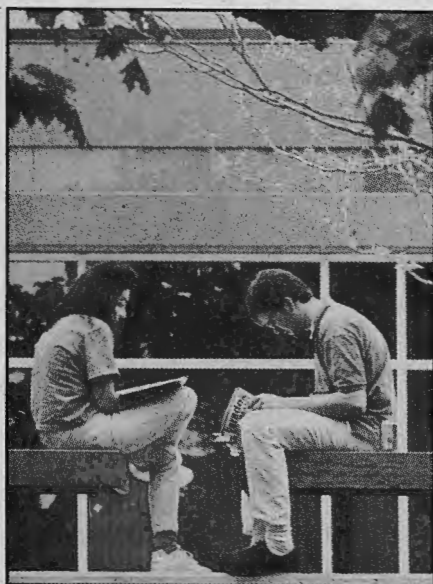
AIDS is one of the most tragic, life-threatening epidemics of modern times. Students, faculty, and staff at the University of Rhode Island must provide the compassion, understanding, and support necessary to help individuals with AIDS and HIV infection. As part of this responsibility, the University will vigorously enforce individual rights of confidentiality and freedom from discrimination. The rights of individuals with AIDS are covered under three University policies based on Section 504 of the Rehabilitation Act of 1973:

"Reasonable Accommodation for Handicapped Employees," "Life-Threatening Illness," and "Handicapped Policy." Copies of these policies are available at the Office

of Human Resource Administration, the front desk at Health Services, and the Disabled Student Services Office in the Memorial Union.

Inquiries concerning compliance with antidiscrimination laws should be addressed to the Affirmative Action Officer, Carlotti Administration Building; or to the Director, Office for Civil Rights, Department of Education, Region I. Questions regarding provisions for the disabled should be directed to Disabled Student Services in the Office of Student Life, 332 Memorial Union. Phone: 401-792-2101.

PROGRAMS AND REQUIREMENTS



programs of study. While every effort is made to keep this bulletin current, not all courses and programs of study listed may be available at the time of the student's matriculation. Similarly, course and program requirements may be changed from time to time. In all cases, every effort will be made to accommodate individual students whose exceptional circumstances may make it difficult or impossible to meet the changed requirements. Changes in the academic calendar may also be made when deemed to be in the best interests of the institution.

Accreditation. The University of Rhode Island is accredited by the New England Association of Schools and Colleges, Inc. In addition, certain courses and programs of study have been approved by national accrediting agencies.

The New England Association of Schools and Colleges is a nongovernmental, nationally recognized organization whose affiliated institutions include elementary schools through collegiate institutions offering postgraduate instruction.

Accreditation of an institution by the New England Association indicates that it meets or exceeds criteria for the assessment of institutional quality periodically applied through a peer group review process. An accredited school or college is one that has available the necessary resources to achieve its stated purposes through appropriate educational programs, is substantially doing so, and gives reasonable evidence that it will continue to do so in the foreseeable future. Institutional integrity is also addressed through accreditation.

Accreditation by the New England Association is not partial, but applies to the University as a whole. As such, it is not a guarantee of the quality of every course or program offered, or of the competence of individual graduates. Rather, it provides reasonable assurance about the quality of opportunities available to students who attend the University.

Inquiries regarding the status of an institution's accreditation by the New England Association should be directed to the administrative staff of the school or college. Individuals may also contact the association at 209 Burlington Road, Bedford, MA 01730. Phone: 617-271-0022.

The national accrediting agencies that have approved the quality of certain course offerings and programs of study include the American Assembly of Collegiate Schools of Business, the American Chemi-

cal Society, the American Council on Pharmaceutical Education, the American Dental Association (Council on Dental Education), the American Dietetic Association, the American Psychological Association, the American Society of Landscape Architects, the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology, the National Association of Schools of Music, the National Association of State Directors of Teacher Education and Certification, the National Council for Accreditation for Teacher Education, and the National League for Nursing.

The University is also an approved member institution of the American Association of University Women, the Association for Continuing Higher Education, the Council of Graduate Schools in the United States, the North American Association of Summer Sessions, and the National University Continuing Education Association.

General Education Requirements

These requirements apply to entering freshmen beginning in the fall of 1981, and students transferring beginning in the fall of 1981 with fewer than 16 transferable credits. Students who entered prior to fall 1981 must follow the General Education requirements outlined in the *Undergraduate Bulletin* for 1980-81 or the year in which they matriculated at the University. Students returning after an absence of more than eight years must follow the current General Education requirements.

The University of Rhode Island believes that all undergraduate students, regardless of their degree programs, need experience in the study of fundamentals that builds on the student's previous education and continues through the undergraduate years and beyond. Thus, all bachelor's degree students follow the same University-wide General Education requirements.

General Education is that part of the undergraduate curriculum in which students explore a broad spectrum of intellectual subjects, approaches, and perspectives. The General Education component of the curriculum aims to help accomplish three goals: 1) to develop further the essential English communication abilities on which advanced studies depend; 2) to offer experience in five broad subject areas: fine arts and literature, letters, mathematics, natural sciences, and social sciences; and 3) to

Consistent with its policy of allowing the greatest latitude possible in course selection, the University offers a wide choice to fill its General Education requirements and encourages students to select free electives that cross departmental and college lines. This section deals with academic requirements, regulations, and opportunities that are University-wide rather than college-related.

The University attempts to provide the successful student with a range of knowledge and skills which can, with appropriate motivation and initiative, be used in a variety of ways after graduation. Study options vary from the traditional liberal education to programs that are heavily vocationally oriented. Successful completion of any course of study at the University, however, does not guarantee that the student will find either a specific kind or level of employment.

Students interested in the career opportunities related to particular programs of study are encouraged to consult University College advisors, the appropriate department chairperson, or the Office of Career Services. For students who are uncertain about their career choices, the Counseling Center also offers help.

The University administration may alter, abridge, or eliminate courses and

expose the student to a foreign language or culture.

Corresponding with these goals, the General Education program is divided into the following components:

English Communication. *Six credits* in English communication, at least three of which must be in a course designed specifically to improve written communication skills;

Fine Arts and Literature. *Six credits* in courses related to historical and critical study of the arts and literature as well as creative activity;

Foreign Language or Culture. *Six credits* or the equivalent in a foreign language or foreign culture;

Letters. *Six credits* in courses that address fundamental questions about the human condition, human values, and ways of communicating these values;

Mathematics. *Three credits* in a course specifically designed to provide training in college-level quantitative skills and their application;

Natural Sciences. *Six credits* in courses in physical, chemical, or biological sciences;

Social Sciences. *Six credits* in courses related to the study of the individual (development and behavior) and society.

Specific courses that may be used to meet these requirements are listed in the following groups:

English Communication: Writing (Cw)—BGS 100; CMS 101; ELS 112, 122; ENG 103; HPR 112; WRT 101, 103, 123, 201, 227, 301, and 333. **General (C)**—CMS 101; COM 101 and 103; HPR 111; PHL 101.

Fine Arts and Literature (A): AAF 247, 248; ARH 120, 251, 252, 265, 284, 285, 359, 364, 374; ART 101, 103, 203, 207, 215, 231, 233; CLA 391, 395, 396, 397; CLS 160, 250, 335; COM 231; ENG 160, 241, 242, 243, 247, 248, 251, 252, 260, 263, 264, 265, 280; FRN 327, 328, 391, 392, 393; GER 325, 326, 392; HPR 101, 105; ITL 325, 326, 391, 392, 395; LAR 201; MUS 101, 106, 111; PLS 233; RUS 325, 326, 391, 392; SPA 305, 306, 307, 308, 325, 391, 392, 393; THE 100, 181, 351, 352, 381, 382, 383.

Foreign Language or Culture (F): This requirement shall be fulfilled in one of the following ways: 1) a two-course sequence

in a language previously studied for two or more years in high school through at least the 103 level in a living language or 301 in a classical language appropriate to a student's level of competence (e.g., 102 and 103, 102 and 301; 131 and 103; 103 and 104; 301 and 302); 2) demonstration of competence through the intermediate level by a proficiency examination¹ or by successfully completing the 104 level in a living language or the 302 level in a classical language; 3) course work in a language not previously studied (or studied for less than two years in high school) through the beginning level; 4) study abroad in an approved academic program for one semester; 5) majoring in a foreign language; 6) course work selected from one foreign culture cluster taken, if possible, in the same or successive semesters from the following list: *Africa*, AAF 250, APG 250, 313, HIS 388, PSC 408; *American Indian*, APG 303, 311, HIS 344; *Ancient Greece and Rome*, ARH 354, CLA 391, 395, 396, 397, ENG 366, GRK 109, 110, HIS 111, 303, PHL 321; *East Asia*, HIS 171, 374, 375, PHL 331, RLS 131; *France*, ARH 265, FRN 392, 393, HIS 330; *Germany*, GER 392, HIS 125, 326, 327; *Ireland*, APG 325, IRE 391, 392, WMS 333; *Israel*, HIS 378, PSC 321; *Latin America*, APG 315, HIS 180, 381, 382, 384, SPA 393; *Medieval Europe*, ARH 356, HIS 112, 304, ITL 395, PHL 322; *Middle East*, HIS 176, 177, 376, 377, PSC 321; *Modern Civilization (Early)*, ENG 252, HIS 123; *Modern Europe (Early)*, ARH 359, HIS 113, 306, 307, 314, PHL 323; *Modern Europe*, ARH 363, HIS 114, 310, 311, 315, PSC 401; *Renaissance in Europe*, ARH 365, HIS 305, ITL 391, SPA 391; *Russia and the Soviet Union*, HIS 132, 332, 333, RUS 391, 392, PSC 407; *URI in England*, ENG 397, HIS 397. In addition, HPR 106 may be used by students in the Honors Program to fulfill this requirement. *Formally registered international students and students with a recognized immigrant status will be exempt from the foreign language or foreign culture requirement.*

Letters (L): AAF 150, 388; APG 327; BGS 392; CLS 235; COM 200, 205, 210; HIS 111, 112, 113, 114, 115, 116, 118, 123, 125, 132, 141, 142, 143, 145, 150, 171, 176, 177, 180, 304, 305, 306, 307, 309, 310, 311, 315, 321, 323, 324, 327, 332, 333, 340, 341, 342, 346, 353, 354, 360, 372, 376, 377, 381, 382, 384, 398; HPR 104, 107, 203; JOR 110; LAR 202; LET 151, 351; NES 200; NUR 360; PHL 103, 235, 204, 210, 212, 217, 314; 318, 319, 321,

322, 323, 324, 325, 328, 331, 346, 355; PSC 240, 341, 342; PSY 310; RLS 111, 125, 126, 131; WMS 333.

Mathematics (M): CSC 201; HPR 108; MTH 107, 108, 111, 131, 132, 141, 142; QBA 101, 102; STA 220.

Natural Sciences (N): APG 201; AST 108; AVS 101; BGS 391; BIO 101, 102; BOT 101, 111; CHM 100, 101, 102, 103, 105, 112, 114, 124, 191, 192; FSN 207; GEL 100, 102, 103; HPR 103, 109; NRS 212; OCG 123, 401; PHY 109, 110, 111, 112, 130, 140, 185, 186, 213, 214, 285, 286; ZOO 111, 286.

Social Sciences (S): APG 200, 202, 203, 220, 319; BGS 390; CNS 220; COM 220; ECN 100, 201, 202, 300, 361; EDC 102, 312; ENG 232, 330; GEG 100, 104; HDF 220; HLT 123; HPR 102, 110; HSS 350; LIN 200, 202, 220; MGT 110; NRS 100; NUR 150; PSC 113, 116, 201, 221, 288; PSY 103, 113, 232, 235, 254; REN 105; SOC 100, 102, 204, 206, 212, 214, 216, 224, 238, 240, 241, 242, 316, 330, 336; TMD 224; WMS 150.

Students in the Honors Program can receive General Education credit for honors sections of courses that have been approved for General Education credit.

Transfer students can receive General Education credit for courses taken at other institutions as long as such credits are in courses equivalent to courses given General Education credit at the University of Rhode Island.

Students must meet the curricular requirements of the colleges in which they plan to earn their degrees. Some colleges require that students select specific courses from the above lists. Therefore, students must refer to the requirements specified for their programs (pages 33–89).

In the Colleges of Arts and Sciences and Human Science and Services and for the Bachelor of General Studies, credits within a student's own major may not be counted toward General Education requirements in Fine Arts and Literature, Letters, Natural Sciences, or Social Sciences. In other colleges, credits within a student's professional college may not be counted toward

¹ Students who fulfill this requirement through an examination cannot earn course credit for graduation. Students who earn less than six credits in fulfilling the requirement should apply credits to the elective or major areas.

any General Education requirements. However, courses that serve as prerequisites for a major can be used to fulfill the General Education requirements.

Other Academic Requirements

Certain basic courses are required in many curriculums for transfer from University College into the degree-granting colleges at the junior-year level. These are listed in the curriculums of the individual colleges.

The responsibility for meeting all course and credit requirements for the degree must rest with each individual student.

Students who desire to accelerate their programs and receive credit for courses taken at other institutions or during Summer Session or in the College of Continuing Education must have prior approval from their academic deans.

Minor Fields of Study

Undergraduate students may declare a "minor" field of study. Requirements for a minor may be satisfied by completing 18 or more credits in: 1) any one of the University-approved minors; 2) a curriculum other than the student's major; or 3) related studies from more than one department under the sponsorship of a qualified faculty member. Descriptions of approved interdepartmental minors may be found in the section "Interdepartmental Study." Descriptions of requirements for approved departmental minors may be found in the departmental sections.

To declare a minor, a student must have the approval of the department chairperson of the minor field of study and of the dean. Faculty sponsorship is required for the third option listed above. Students in the College of Business Administration need the approval of the Scholastic Standing Committee for the third option.

A minimum quality point average of 2.00 must be earned in the minor courses, and at least 12 of the 18 credits must be at the 200 level or above. At least half of the credits required for the minor must be earned at the University of Rhode Island. General Education requirements may be used for the minor, but no course may be used for both the major and minor field of study. Minor courses may not be taken on a pass-fail basis.

Application for the minor must be filed in the academic dean's office no later than the beginning of the student's final semester or term.

Interdepartmental Study

Students are encouraged to develop interests across departmental lines. A number of such programs are available both as areas of interest or minors, and as degree programs. The interdepartmental minors are listed below; for interdepartmental majors in comparative literature studies, consumer affairs, human science and services, and women's studies, refer to the Index at the back of this bulletin.

African and Afro-American Studies.

Students who declare African and Afro-American studies as a minor are required to take two core courses: AAF 201 and 202 (six credits). In addition, students select four electives (12 credits) from the following: AAF 250, 360, 390, 410, 474; APG 250, 313; COM 333; ECN 404; ENG 247, 248; 360, 362, 363, 364, 474; HIS 150, 384, 388; and PSC 408, 410. Students who want to use other courses that have as their central focus some aspect of the black experience may do so with permission from the program director.

Biology. Students who declare biology as a minor must take BIO 101 or BOT 111; BIO 102 or ZOO 111; and MIC 211 or MIC 201. The remaining courses may be selected from BCP 311 and any BOT, MIC, or ZOO course. At least 18 credits are required; at least 12 of the 18 credits must be taken at the 200 level or above.

Comparative Literature Studies. Students who declare comparative literature studies as a minor must earn 18 credits distributed as follows: six credits in comparative literature studies at the 200 level or above; 12 credits from literature courses in comparative literature studies, English, or languages, of which six credits must be in one national literature either in the original language or in translation. Students majoring in English or languages may not count courses in their major toward this minor. For a description of the degree program in comparative literature studies, see page 40.

Consumer Affairs. Students who declare a minor in consumer affairs are required to complete 18 credits including CNS 220, 320, and 420. The remaining nine credits can be selected from CNS 210, 321, 340,

342, 350, 415, 422, 440, 457, or other courses approved in consultation with CNS faculty. For a major in consumer affairs, see page 73.

Film Studies. Students who declare a minor in film studies must complete 18 credit hours of courses in which film or video is the primary text of study, including a minimum of three credits in each of the three following approaches to film study: *Aesthetic* (ARH 374, ART 215, 316); *Cultural* (AAF 300H, HIS 358, ITL 315); and *Literary* (ENG 300, 346). Experimental and special topics or other irregular courses in film may be used to fulfill requirements for this minor in some particular way specified in writing by the instructor of the course.

Gerontology. The program in gerontology is a University-wide program that promotes study, teaching, and research in aging. It also maintains relationships with state and local agencies serving the older population of Rhode Island. This affords opportunities for research, internships, and field experiences to students interested in the problems of aging.

The adulthood and aging option within the Bachelor of Science degree in human science and services is limited to 15 students a year. There is also the opportunity for students taking their major studies in a number of areas to do a less specialized study in aging by declaring a minor in gerontology. This must be done not later than the first semester of the senior year. It requires 18 or more credits in aging-related studies approved by the program in gerontology and the college in which the student is registered.

HDF 220 (Gerontology: Theory and Application) is required for either specialization. It also meets a social science requirement in General Education. Undergraduate gerontology courses include: HDF 221, 420, 422, 431; CNS 342; DHY 462; FSN 307; RCR 416; and SOC 438. Also relevant are ZOO 242; HDF 380, 421, 450; NUR 346; and the University Year for Action.

It is important to take courses that fulfill degree requirements from the beginning. Students who wish to specialize in aging are advised to contact the program in gerontology early in their university studies.

International Development. The international development minor is available to undergraduates interested in employment

overseas or in domestic enterprises with international operations.

Students choosing the international development minor must complete 18 credits, with a maximum of six credits at the 100 or 200 level. Students must complete the following: 1) RDV 300 (three credits); 2) language or culture (six to nine credits), to be met by the completion of at least six language credits through the intermediate level (103 or 104) or placement in the conversation and composition level (205 or 206) and completion of at least six credits in the same language or culture cluster. Placement for course work is determined by the Educational Testing Service exam as administered by the University's Department of Modern and Classical Languages and Literatures in the following languages: French, Spanish, German, and Russian. The University also offers Portuguese and selected other languages that, with permission, could satisfy the requirement. Six credits are allowed in the General Education requirements for language and culture; 3) an approved internship (three to six credits) providing international development experience during the junior or senior year (RDV 487); and RDV 495 (three credits) of an advanced-level seminar. Course descriptions for RDV 300, 487, and 495 can be found on page 160.

The College of Resource Development administers the program; interested students should contact Professor David Abedon, Rodman Hall, or Donald McCreight, 131 Woodward Hall.

Justice, Law, and Society. Students declaring a minor in justice, law, and society must complete a minimum of 18 credits from among the courses listed below. At least three credits must be completed in each of the three groups. The courses marked with an asterisk have prerequisites not included in this program; students are responsible for completing these prerequisites prior to enrolling in the course. Other courses, such as topics courses, may be approved for credit by the program coordinator. *Law:* APG 326; ECN 337; PHL 430; *PSC 288, *369, *471, *472. *Social Justice:* AAF 201; AAF/HIS 150; APG 311, 322; ECN 300, *303, 404; *HIS 328, 344, 346, 349, 351, *352; PHL 210, 217, 314, *318; *PSY 480; *SOC 240, 242, 316, *413, *428, *438, *472; *WMS 150, 310. *Criminal Justice:* ECN 403; PSC/SOC 474; *PSY 254, *261, 335, *460, 465, *466; SOC 314, *330, *331, *420.*

New England Studies. Students who declare New England studies as a minor must take either NES 200 or 300 and elect at least one course from each of the following four categories. *Aesthetic Dimensions:* ART 263; ENG 340, 347. *Cultural Patterns:* APG 317; ENG 337; PSC 221. *Historical Dimensions:* HIS 335, 346, 362. *Physical Dimensions:* BOT 323, 418; GEL 101; NRS 301, 302. Permission can be obtained from the Committee for New England Studies to use any rotating topics course, seminar, etc., whose focus is on some aspect of New England as a substitute for any of the above courses.

Special Populations. This interdepartmental minor gives students the opportunity to explore the theory and gain practical experience through working with people who have special needs. This includes people who are handicapped (physically, emotionally, mentally, or educationally) or are different (socioeconomically, behaviorally, culturally) and as a result have special needs.

A minimum of 18 credits may be earned by taking the required courses (HDF 200 or PSY 232; PSY 442), a minimum of three credits in supervised field experience, and a minimum of nine credits of selected electives.

Courses are chosen in consultation with an advisor from one of the participating departments: Communication Studies; Education; Food Science and Nutrition; Human Development and Family Studies; Nursing; Physical Education and Health; Psychology; Sociology and Anthropology; Textiles, Fashion Merchandising, and Design; or Theatre. The College of Human Science and Services administers the program, and interested students should contact the program head, Jeannette E. Crooker, 132 Tootell Center.

Textile Marketing. This undergraduate interdepartmental curriculum may be pursued through the College of Human Science and Services.

Textile marketing managers are responsible for planning and directing the flow of textile products from the manufacturer to the consumer. The major, which provides a strong background in both textiles and marketing, is designed to give students the opportunity to explore the areas of styling and design, manufacturing, market research, consumer behavior, advertising, promotion, fashion, and sales. The specific

requirements of the curriculum can be found on page 78.

Urban Affairs. The undergraduate program in urban affairs consists of five different interdepartmental degree curriculums: three in the College of Arts and Sciences and two in professional colleges. They aim to provide students with a general understanding of contemporary urban society and the opportunity to pursue specialized study of urban problems and prospects from the perspective of varied disciplines, whatever the students' interests and career objectives.

The five majors are: 1) urban social processes, 2) policy formation, and 3) spatial development, in the College of Arts and Sciences; 4) home economics in the urban environment, in the College of Human Science and Services; and 5) resource development in the urban environment, in the College of Resource Development. Curriculum requirements are detailed in the appropriate college sections in this bulletin.

The Urban Affairs Program is coordinating its offerings with the Department of Social Sciences at the Community College of Rhode Island. Students at the junior college are encouraged to consult with their advisors if they wish to transfer to any one of the majors in the College of Arts and Sciences.

The Urban Affairs Program Coordinating Committee includes faculty members from departments throughout the University and supervises the operation of the program. With the endorsement of the faculty of the college concerned, the committee certifies completion of the major requirements for the appropriate undergraduate degree. A member of the committee serves as advisor for each of the five majors and provides interested students with information.

Preprofessional Preparation

Competition for places in graduate professional schools is keen, and a superior academic record throughout college is necessary for admission to these schools. Since requirements for the professional schools vary in their "essential" and "recommended" subjects, the student should consult the catalog of the professional school and then plan his or her undergraduate program accordingly.

Those seeking careers as social workers can enroll as majors in sociology, including in their curriculum the social welfare

courses. A basic foundation for graduate study, whether directed toward college teaching or research careers, can be provided through any of the liberal arts or science majors. The Bachelor of Arts curriculum provides specific majors for those planning to become journalists or public school teachers.

Prelaw Studies. For students who plan professional study of law, guidance and program advice are provided by departmental advisors assigned in University College and by major advisors within various departments and colleges.

Students interested in law school should consult the *Prelaw Handbook*, prepared by the Association of American Law Schools and the Law School Admissions Council. The association finds it inappropriate, given the wide range of a lawyer's tasks, to prescribe either a set of prerequisite courses for prelaw students or preferred major departments. Rather, it recommends that students choose their majors according to their own individual intellectual interests and "the quality of undergraduate education" provided by various departments and colleges. "Shortly stated, what the law schools seek in their entering students is ... accomplishment in understanding, the capacity to think for themselves, and the ability to express their thoughts with clarity and force." The association emphasizes that "the development of these fundamental capacities is not the monopoly of any one subject-matter area, department, or division."

Plan for Early Contingent Admission to the Master of Science (M.S.) Degree Program in Physical Therapy. This plan incorporates the prerequisites for the master's degree in physical therapy in anatomy, chemistry, mathematics, physics, physiology, and psychology with bachelor's degree requirements in a related discipline during the first three years of study. With a proper use of electives, students can complete all physical therapy prerequisites and first-year physical therapy courses as part of a participating B.A. or B.S. degree program. This plan is currently available for the B.S. degree programs in human science and services and physical education.

According to this plan, application to the master's program in physical therapy may occur in the third undergraduate year. Successful applicants are selected for contingent admission to the physical therapy

program at the beginning of the fourth undergraduate year, with course work taken in the fourth year applied to the B.A. or B.S. degree. A bachelor's degree and a 3.00 average in physical therapy courses are required to attain full graduate status and continue in the physical therapy program. Admission to the physical therapy program is highly competitive, and students are advised to maintain close contact with a pre-physical therapy advisor. Students interested in graduate programs in physical therapy at other institutions should consult with those institutions regarding admission requirements. Additional information concerning all admissions requirements for the program in physical therapy at URI is available in the *Graduate Bulletin*.

Teacher Education Programs. The University of Rhode Island offers a variety of academic programs leading to teacher certification at both the undergraduate and the graduate level. Undergraduate teacher education programs are offered by departments in the College of Arts and Sciences, the College of Human Science and Services, and the College of Resource Development. The Council for Teacher Education, through the Office of Teacher Education, provides for the coordination, planning, evaluation, and promotion of all teacher education programs at the University. The following programs are offered at the undergraduate level: early childhood education, elementary education, physical education, music education, resource development education, and secondary education. To find specific program descriptions and information, refer to the Index at the back of this bulletin.

Admission to the Teacher Education Programs. Students interested in undergraduate teacher education programs are required to apply for admission to the Office of Teacher Education. Applications for admission to teacher education programs are normally submitted during the sophomore year. Applications will be reviewed by a departmental screening committee based on the following criteria: 1) recommendations from faculty and others who have knowledge of the candidate's experience or interest in working in education; 2) a writing sample expressing career goals, experience in working with children, and expectations as a teacher; 3) scores on a standardized test(s) of basic skills; 4) the student's academic record, including a cumulative quality point average of 2.50 or better and

grades in the academic major or specialization averaging 2.50 or better. Individual departments or programs may also require an interview.

Transfer students should be advised that academic work completed at the University of Rhode Island is a primary factor in the admission decision. Therefore, students must complete one year of work at the University before they can be considered for admission to the teacher education programs. This may extend the time required for degree completion.

Admission to some programs is competitive, and applicants meeting the minimum criteria described above may not be admitted because of limited space. For additional information, students should consult as early as possible with the specific department in which they wish to enroll or with their University College advisor.

Students denied admission can petition the department for a review of the decision. In such cases, the departmental screening committee meets to consider the appeal. Only exceptional circumstances will lead the appeal committee to override the academic record criteria (2.50 cumulative quality point average and 2.50 in the academic major or specialization).

Applicants who fail to gain admission should seek counsel from an appropriate advisor. Students may reapply for admission to a teacher education program but should understand that this may delay their anticipated graduation date.

Admissions to teacher education programs at the graduate level are governed by the Graduate School in consultation with academic departments. Students with a bachelor's degree should consult the *Graduate Bulletin* and departments regarding individual program requirements.

Teacher Certification. A teaching certificate is, for all practical purposes, a license to teach in a given state, at a specific level, and in a certain type of job. Rhode Island, like other states, requires its public elementary and secondary teachers to hold certificates to ensure that students are taught only by persons who meet specified standards of preparation, health, citizenship, and moral character.

Graduates of a state-approved teacher education program at the University are eligible to receive an initial teaching certificate in Rhode Island and in over 25 other states through the Interstate Certification Compact (ICC). However, states will

grant certification through the ICC only for certifications offered by the state. For example, a state that does not have a certification program in early childhood education (nursery school through Grade 2) will not grant a certificate in that area to a graduate of the University's program in early childhood education without reviewing the student's transcript to see if it meets that state's guidelines for elementary education. Therefore, students interested in applying for certification in states other than Rhode Island should always contact the Department of Education in that state and ask: 1) if the state has the area of certification the student is interested in pursuing at URI; and 2) if the state grants initial teacher certification under the Interstate Certification Compact (ICC) to students who have graduated from a Rhode Island state-approved teacher education program. Also, the student should ask the department to mail the state's application materials for certification. If the state is a member of the ICC, graduates of URI are generally entitled to initial certification for a period of five years following their date of graduation. After receiving another state's certification application, the applicant should read the directions for certification carefully and submit all required documentation.

If the state in which the applicant is requesting certification is not a member of the ICC or does not have certification for the applicant's area of study, he or she should ask that state's Office of Teacher Certification to evaluate his or her transcript and indicate any courses or experiences the applicant would need for certification in that state.

Premedical, Predental, and Preveterinary Programs. The URI Premedical Advisory Committee (PMAC), also known as the Premedical, Predental, and Preveterinary Advisory Committee, oversees these programs. The URI premedical advisor (PMA) acts as the committee chairperson. Committee members offer students academic counseling and information on the admissions process. In addition, the PMAC and the PMA periodically review students' progress, assessing their prospects for admission.

It is advisable for students to select their undergraduate majors based on their own interests and abilities. Students should select their undergraduate majors carefully with appropriate advice from the

PMAC. Students should also make sure that their undergraduate majors provide a foundation of knowledge necessary for the pursuit of several career alternatives. It is not advisable for students to select their undergraduate majors solely or primarily to enhance their chances of being accepted by a professional school.

Students interested in studying in any of the following programs must register with the PMAC secretary, Biological Sciences Building, Room B106.

General Requirements. For students preparing to apply to postgraduate colleges of medicine, dentistry, or veterinary medicine, the program of study includes courses in the humanities, English and literature, the basic sciences, mathematics, the social sciences, and communication. These courses will fulfill the basic admissions requirements.

It is strongly recommended that students complete the required course work at the same time they meet undergraduate degree requirements. Any major or concentration is acceptable, providing that the minimum requirements for admission into a professional school are fulfilled. Ideally, these requirements should be substantially completed before a student takes the national admission test (either the MCAT, DAT, VAT, or GRE) in the spring semester of the junior year.

Most students in these programs major in animal biology (zoology) or in a related field, such as microbiology, chemistry, pharmacy, or another health-related science. Students choose these majors primarily because these are the subjects that interest them most, but also because, nationally, students with these majors represent the largest number of accepted applicants. However, other majors are acceptable.

Many of the course requirements can be met by fulfilling the General Education or Bachelor of Liberal Studies requirements, but professional schools are usually rather specific concerning minimum requirements in the basic sciences and mathematics.

Recommended courses for fulfilling the basic admissions requirements follow. Only the minimum required number of credits is shown.

English and Literature: 12 credits, including one writing course (e.g., WRT 101) and one year of literature.

Animal Biology: 8–10 credits chosen from among the following courses (or their equivalents): chordate anatomy (ZOO 102), general zoology (ZOO 111), general animal physiology (ZOO 201), animal development (ZOO 202), basic genetics (ZOO 104 or BOT 352 or ASP 352), and vertebrate histology (ZOO 327 and 329).

Chemistry: 16 credits, including general inorganic (CHM 101, 102, and lab, CHM 112, 114) and organic (CHM 227, 228, and lab, CHM 226, or their equivalents).

Physics: eight credits, including PHY 111, 185, 112, 186, or PHY 213, 285, 214, 286, or their equivalents.

Mathematics: six credits through calculus, MTH 131 and 132, or MTH 141.

Social and Behavioral Studies: six credits in sociology (SOC 100, 300, or 424) and psychology (PSY 113, 232, or 300).

Modern Foreign Languages: completed through the intermediate level.

Electives: eight credits. These optional courses may be selected from upper-level science courses that might have relevance to a professional school's curriculum or they may be selected from humanities courses. Because of the structured and particularized nature of the professional curriculum, upper-level courses in the humanities will help to balance the scientific portion of the undergraduate program. Courses in philosophy, history, fine arts, theater, economics, mathematics, and foreign language and culture are helpful in developing problem-solving and communication skills. They are all educationally fulfilling, and are crucial to the success of an educated person pursuing a professional career.

Applying to Professional Schools. Prior to submitting an application to a professional school, each candidate's credentials are evaluated by the Premedical Advisory Committee. By the first semester of the junior year, each applicant must provide the PMAC with the following items in writing:

1. A request from the applicant to the PMAC for a letter of evaluation in support of his or her application to a medical, dental, or veterinary school.

2. An official report of the applicant's SAT scores from the testing agency or from his or her high school or other secondary school.

3. Official, recent academic transcripts of all college courses taken at URI and elsewhere.

4. Official reports of scores on the appropriate admission test (MCAT, DAT, VAT, or GRE) sent directly to the PMAC from the testing agency.

5. An autobiography that includes a commentary on the way the applicant's career goals have developed.

6. A description of all extracurricular activities.

7. A description of all honors bestowed on the student.

8. A description of volunteer hospital, dental, veterinary, or other health-related work.

9. A minimum of three letters of evaluation written by persons who can evaluate candidly the applicant's experience and ability to engage in professional and scientific study.

In addition, a series of personal interviews with members of the PMAC in the spring semester of the junior year must be included in the final evaluation of the applicant's candidacy. As a result of this evaluation, which takes place in the spring semester of the junior year, the PMAC decides either to write a letter of evaluation in support of a candidate's application or to advise the candidate on an alternative plan.

Premedical Studies. Approximately 85 percent of URI applicants recommended by the PMAC are admitted into medical schools of their choice.

The average admission rate to medical schools in the United States is only about 40 percent. Competition is very strong, and it is wise to plan for an alternate career. Candidates should become familiar with the requirements for admission to the medical schools to which they expect to apply. These are listed in *Medical School Admission Requirements*, published annually by the Association of American Medical Colleges. Copies of this reference and the requirements of certain medical schools are available from the PMAC Secretary, Room B106, Biological Sciences Building. Phone: 401-792-2670.

Medical schools generally require at least a 3.00 quality point average and high scores on the required Medical College Admission Test (MCAT), taken preferably in the spring semester of the third undergraduate year.

All candidates must have personal interviews with the PMAC. Normally these

interviews take place during the spring semester of the third undergraduate year.

The University of Rhode Island-Brown University Early Identification Program for Sophomores. This is a plan for the early identification and acceptance of URI students into the School of Medicine at Brown University. These students must be Rhode Island residents who are highly motivated, exceptionally qualified, and interested in studying medicine at Brown. An eligible sophomore must have a cumulative quality point average of at least 3.30 after having completed not more than three semesters of academic work at URI.

In December of each year, all eligible students must apply in writing to the URI Premedical Advisory Committee for nomination to this program. In early February, the PMAC conducts a careful evaluation of each applicant's academic and personal qualifications. The committee then nominates as many as three individuals from this group of applicants on the basis of an excellent record, exceptional promise as a URI premedical student, Rhode Island residency, and a desire to study medicine at Brown.

For each nominated student, a completed application and the committee's letter of evaluation are forwarded to the Dean of Medicine at Brown University. Final decisions to accept applications are made by the admissions committee at the Brown School of Medicine.

When URI candidates are accepted into the program, they assume the same status as their Brown counterparts, and they continue their studies at URI. They are free to major in any field of study, so long as they continue to show academic excellence while they complete the required premedical courses. As URI undergraduates, they are invited to take one or two of their premedical courses on the Brown campus with their future classmates, and are included in colloquiums and various social events sponsored by the Brown Medical Student Society.

In the spring of their senior year, before students in the program graduate from URI, they are considered for promotion into the first year of medical studies at Brown. This is the same promotion process that is required of all Brown medical students. Academic performance, interviews with members of the admissions committee, and recommendations from faculty and others are reviewed at this time. When they receive their promotion, students in

the program become first-year medical students at Brown University.

In order to obtain a letter of evaluation in support of an application, each candidate must have personal interviews with the PMAC. Normally these interviews take place during the spring semester of the third undergraduate year. Competition for admission into schools of veterinary medicine is exceptionally strong. Therefore, evidence of high motivation and an outstanding academic record are absolutely essential.

URI Postbaccalaureate Preprofessional Programs. There are two nondegree programs at URI for potential premedical, predental, or preveterinary candidates who have already earned degrees, either from URI or from other colleges or universities.

Candidates must first consult with the URI premedical advisor. The PMAC secretary will arrange for an appointment (Room B106, Biological Sciences Building, 401-792-2670). Candidates must register in writing at the secretary's office.

Program A (one to three years) is designed for students who made a late decision to enter professional school and wish to complete the basic admission requirements prior to submitting an application.

Program B (two to four semesters) is designed for the applicant who has completed the basic admissions requirements and has not yet earned grades that are competitive with other applicants. The individual's specific needs will be met by courses selected in consultation with the premedical advisor.

In order to complete the course work in either of these programs, a candidate should register with the URI Office of the Registrar as a nondegree postbaccalaureate student.

Special Academic Opportunities

English as a Second or Foreign Language. At the University, English as a Second or Foreign Language is not remedial. Nonnative-speaking students who want to continue to perfect their English so as to enhance their chances of success in their studies may do so by taking English Language Studies 112 and 122, two regularly offered courses that count toward the Basic Liberal Studies requirement in English Communication. Students who need these courses are strongly urged to take them in their freshman year.

In addition to these two three-credit courses, the University offers one-credit, content-based English language study sections (ELS 201), under the auspices of the English Language Fellows Project. These one-credit sections may be repeated, in conjunction with other courses, a total of 12 times. Thus, it is possible for students who speak other languages to continue studying English, for credit, throughout their years as undergraduates.

For more information about the English Language Fellows Project, or about ELS 112 and 122, contact the Director of English Language Studies, Department of English, Independence Hall. Phone: 401-792-5931 or 401-792-4686.

Honors Program. The University Honors Program offers motivated students opportunities to broaden their intellectual development and to strengthen their preparation in major fields of study. The program consists of courses in analytical thinking skills which prepare academically talented students to get the most from classes throughout their undergraduate years, a colloquium that brings distinguished authorities to campus from across the nation, special tutorials in major concentrations of study, and independent research projects under the guidance of a faculty sponsor. Honors courses at the 100 and 200 levels treat general topics and usually count for General Education credit in particular divisions. Those at the 300 and 400 levels are more specialized and often are used to fulfill the requirements of a major.

Eligibility standards are established by the Honors Program and Visiting Scholars Committee. Students may take honors work if they meet the following standards: freshmen must have graduated in the upper 10 percent of their high school class or must submit a letter of recommendation from their high school principal or guidance counselor; sophomores, juniors, and seniors must have earned at least a 3.20 cumulative quality point average. (Under special circumstances, these eligibility requirements may be modified with the permission of the Honors Program director.)

Eligible students may participate in the Honors Program in one of two ways: they may take honors courses on an occasional basis, registering for any number or pattern of courses that interest them; or they may do honors work on a regular basis, meeting the specific requirements to receive the transcript notation "Completed the University Honors Program." In the

latter case, a student must begin honors work no later than the beginning of the sophomore year and must complete a minimum of 15 honors course credits that meet the following requirements: 1) three credits at the 100 level; 2) three Honors Colloquium credits (HPR 201 or 202); 3) three credits at the 300 level (tutorial); 4) six credits at the 400 level, which may be either six credits of the Senior Honors Project (HPR 401, 402) or three credits of the Senior Honors Project (HPR 401) and three credits of the Senior Honors Seminar (HPR 411); and 5) a 3.20 quality point average for honors courses and a 3.20 cumulative quality point average.

See page 124 for a list of honors courses.

National Student Exchange Program.

The National Student Exchange (NSE) program offers URI students the opportunity to study at more than 100 participating state colleges and universities in 46 states paying in-state rates or URI tuition while maintaining their status as URI students. NSE offers the opportunity to explore new geographical areas, experience academic diversity, and study under different educational and social circumstances in various parts of the United States. Financial aid is available to participants in this program. For further information, contact the Study Abroad and National Student Exchange Office, Taft Hall.

New England Land-Grant Student

Exchange Program. Students with special academic interests can take advantage of the talent and resources available at the region's state universities without having to become a degree candidate at another institution. Under a cooperative agreement, URI students can study for one or two semesters at the other New England land-grant institutions if they wish to take a course, a sequence of courses, or part of a program not available at URI. Students participating in this program pay their normal URI tuition and fees and maintain their status as URI students. Advisors or members of the University College staff have more information about this program and its requirements.

Rhode Island Interinstitutional

Exchange. Full-time students matriculated at one of the public institutions of higher education in Rhode Island may enroll for a maximum of seven credits of their full-time schedule per semester for study at one of the other public institutions at no addi-

tional expense. Each institution will determine and maintain the integrity of the degree to be awarded. Students will be subject to the course selection process applicable at the receiving institution. Summer Session and Continuing Education registrants are not covered under this program. Students interested in this arrangement should contact the Office of the Registrar.

Ocean Studies. Undergraduates are encouraged to explore opportunities at the Narragansett Bay Campus for active participation in the oceanographic sciences. Juniors and seniors may spend an entire semester at the Bay Campus pursuing their individual marine interests, for which they receive full academic credit. They work as part of a research team in the laboratory and in the field under the direct guidance of the Graduate School of Oceanography faculty.

Study Abroad. The Study Abroad and National Student Exchange Office sponsors University programs abroad, helps students make arrangements for foreign study, and maintains information about overseas study programs. The office also assists in the evaluation of credits from study abroad. The University of Rhode Island sponsors exchange programs with universities in Austria, England, France, Indonesia, Japan, Korea, Mexico, Spain, and Venezuela. The University also participates in the New England-Quebec and New England-Novia Scotia exchange programs enabling our students to study at any of the 21 English- and French-speaking universities in these provinces on an exchange basis. Many of these exchange programs make study abroad available to our students at a modest cost. The Study Abroad director and advisor help students who wish to participate in these or other approved academic programs in choosing the appropriate programs, obtaining prior approval for courses to be taken abroad, and retaining matriculated status at the University of Rhode Island during their absence from campus. Most forms of financial aid are applicable to study abroad. For further information, contact the Study Abroad and National Student Exchange Office, Taft Hall.

University Year for Action (UYA). The UYA Internship Program is administered by the Office of Internships and Field Experience. It is an academic program that

provides undergraduate students with opportunities for professional development and field study during the academic year as well as the summer. It is especially designed for the motivated student who wishes to apply classroom learning to a field experience in a career-related setting. Students from any undergraduate curriculum may apply for 15 credits in free or professional electives.

Students work full time under the supervision of qualified professionals in carefully selected settings. A weekly seminar brings interns together to discuss issues that emerge during the internship. The program offers students a choice of more than 550 placements that include the categories of law, counseling, government, administration, public relations, communications, alternative education, health, nutrition, marketing, management, marine affairs, environmental science, and medical research.

To apply, students must have a minimum quality point average of 2.50 and junior or senior standing.

Army Reserve Officers Training Corps (ROTC)

Army Reserve Officers Training Corps (ROTC) is offered by the University and is available to all male and female students. Physically qualified American citizens who complete the entire four-year program are eligible to be commissioned in the U.S. Army. Delayed entry into active service for the purpose of graduate study is available. Military science is designed to complement other instruction offered at the University. Emphasis throughout is on the development of individual leadership abilities and preparation of the student for future important leadership roles in the Army. Professional military education skills in written communication, human behavior, military history, mathematical reasoning, and computer literacy are fulfilled through required University General Education courses and the military science curriculum. Three variations of ROTC are available.

During the four-year program, students participate in required military science courses and activities. Attendance at a six-week advanced training camp is required between the third and fourth year.

The two-year ROTC program begins with a six-week Camp Challenge summer training session (with pay). After successful

completion of Camp Challenge, the student enters the third year of ROTC and attends advanced camp during the next summer. As an alternative, an enlisted member of the Army National Guard or Army Reserve who has completed basic training can qualify for the two-year ROTC Simultaneous Membership Program.

The third variation consists of a three-year program for students who wish to enter ROTC during their sophomore year or who intend to complete their academic studies in three years. This program compresses the requirements for the Basic Course into one year.

All Basic Course (freshman and sophomore) military science courses are an excellent medium for personal enrichment. Significant scholarship opportunities are available.

Completion of the four-year military science program qualifies students to petition their college for a minor in military science.

Enrollment in any military science course allows a student to compete for off-campus training at the following U.S. Army schools: Airborne, Air Assault, Northern Warfare School, and Nurse Summer Training in Europe.

Grades and Points

Student grades are reported as A, A-, B+, B, B-, C+, C, C-, D+, D, and F. The unqualified letter grades represent the following standing: A, superior; B, good; C, fair; D, low grade, passing; F, failure; S, satisfactory; U, unsatisfactory.

Grades are given quality point values as follows: A, 4.00 points; A-, 3.70 points; B+, 3.30 points; B, 3.00 points; B-, 2.70 points; C+, 2.30 points; C, 2.00 points; C-, 1.70 points; D+, 1.30 points; D, 1.00 points; F and U, 0 points. P and S are not calculated in the quality point average.

Grade reports are mailed to all students at their home addresses at the end of each semester. Midsemester grade reports are mailed to all freshmen at their local addresses at the midpoint of each semester. These midterm reports are intended to alert freshmen to their academic status and to aid in advising. Midterm grades are not recorded on permanent academic records nor are they figured into quality point averages.

A grade may be reported as "incomplete" only when course work has been passing but has not been completed due to

illness or another reason that in the opinion of the instructor justifies the report of incomplete. Incomplete grades that are not removed from an undergraduate student's record by the following midsemester will remain on the student's permanent record.

Students are required to make up failures in required courses. The course should be repeated when next offered. No limit is placed on the number of times a course may be repeated, but the credit requirement for graduation is increased by the number of credits repeated. Students are not required to make up failures in elective courses.

Certain courses do not lend themselves to precise grading, and for these courses only S (satisfactory) or U (unsatisfactory) will be given to all students enrolled. S/U courses are labeled as such in the University bulletins. S/U courses are not counted as courses taken under the Pass-Fail option.

Pass-Fail Grading Option

This plan encourages undergraduate matriculated students to increase their intellectual breadth and discover aptitudes in new areas of knowledge. A student above the freshman level who is not on probation may register under this plan for courses considered to be free, unattached electives by the college in which he or she is enrolled. Courses designated in the student's curriculum as degree requirements, General Education requirements, and military science courses may not be included.

A student choosing to take a course under this plan must notify his or her advisor, academic dean, and the Office of the Registrar in writing, prior to the end of the add period of each semester. The instructor is not informed.

Grades will be P (pass) or F (fail). The P grade is credited toward degree requirements, but not included in the quality point average. The F grade is calculated in the same manner as any other failure. A student may change from the P-F option to grade by notifying the Office of the Registrar in writing before the last date for dropping courses.

A student may elect not more than three P-F courses each semester and not more than two P-F courses during a summer.

Second Grade Option

Under specified conditions and with the approval of the academic dean, freshmen and transfer students in their first semester may repeat a course in which a grade of C- or lower was earned. Only the grade earned in the second attempt will be calculated in their quality point average. All grades earned for a given course will remain on the student's permanent academic record. A student may not repeat a course in which a grade of "C" or better was earned without approval of the academic dean.

Dean's List

Undergraduate matriculated students who have achieved certain levels of academic excellence in any semester are honored at the end of that semester by inclusion of their names on the Dean's List. The Office of the Registrar will publish lists of students who have attained the required quality point average.

A full-time student may qualify for the Dean's List if he or she has completed 12 or more credits for letter grades and achieved a 3.30 quality point average.

A part-time student may qualify for the Dean's List if he or she has accumulated 12 or more credits for letter grades and achieved a 3.30 quality point average.

Probation and Dismissal

A student will be placed on scholastic probation if the student's overall cumulative quality point average falls below 2.00. For purposes of determining dismissal of part-time students, scholastic standing committees will consider an accumulation of 12 credits as the minimum standard for one semester's work.

A student will be dismissed for scholastic reasons when he or she has a deficiency of eight or more quality points below a 2.00 average after being on probation the previous semester. A student on probation for the second successive semester who has a deficiency of eight or fewer quality points below a 2.00 average will continue on probation. At the end of the third semester of probation, a student will be dismissed. Students who obtain less than a 1.00 average in their first semester will be dismissed automatically.

A student subject to dismissal will be so notified by the dean, after which he or she

will have five days to file a written appeal with the dean.

Students are expected to be honest in all academic work. Instructors will have the explicit duty to take action in known cases of cheating or plagiarism. For details, consult the *University Manual*, sections 8.27.10-8.27.20.

Leave of Absence

Occasionally, students are forced to take a semester or two off because of circumstances beyond their control. Others find they simply need a break from studying. For these students taking a leave of absence might be wise. Students who have an approved leave of absence for a semester or a year may register for the semester in which they plan to return without applying for readmission. Undergraduate students can apply for a leave of absence through the Office of the Registrar.

Withdrawal from College

A student who wishes to withdraw from the University prior to the end of the semester or summer session shall do so according to procedures established by the Office of the Registrar. If the withdrawal process is completed satisfactorily and the student has cleared all financial obligations to the University, the date of withdrawal will be noted on the student's permanent academic record. No grades for the current semester will be recorded.

Students who withdraw from the University after the last day of classes but before a semester ends will be graded in all courses for which they are officially registered. If a student withdraws from the University after midsemester, grades will be recorded for any course that has an officially specified completion date prior to the date of withdrawal.

A student who withdraws from the University after midsemester and who seeks readmission for the next semester will be readmitted only with approval of the Scholastic Standing Committee for the college or school in which registration is desired.

Graduation Requirements

To graduate, a student must have completed the work for, and must have achieved the minimum quality point average established by, the curriculum in

which he or she is enrolled and must have earned at least a 2.00 quality point average.

In addition, students must abide by community standards as defined in the *University Manual* and the *Student Handbook*.

The work of the senior year has to be completed at the University of Rhode Island. Exceptions must be approved by the faculty of the college in which the student is enrolled.

Any student who has met the requirements for a second bachelor's degree and has completed an additional 30 hours of credit beyond the minimum requirements for the initial degree may be granted two bachelor's degrees.

Any student who has met the requirements for two separate majors within any single bachelor's curriculum has earned a double major and may have both fields listed on his or her permanent record.

Students who complete at least 60 credits of their work at the University are eligible to graduate with distinction. Grades in all courses attempted at the University will be included in the calculation of the quality point average. Those who attain a cumulative quality point average at the time of graduation of at least 3.30 are recognized as graduating "with distinction." Those who achieve a cumulative quality point average of at least 3.50 graduate "with high distinction," and those who attain a cumulative quality point average of at least 3.70 graduate "with highest distinction."

University Manual

University regulations governing matters such as conduct, grading, probation and dismissal, academic integrity, withdrawal from college, and graduation requirements are fully explained in the *University Manual*. Copies of the *University Manual* are available for reference in the library and in the deans' offices.

Such rights and responsibilities are also described in the *Student Handbook*, which is available from the Office of Student Life.

Graduation Rates

In 1992-93, the graduation rate for students who entered the University of Rhode Island as full-time students in 1985-86 was 62 percent.

ADMISSION AND REGISTRATION



Admission to the University

Ideally, admission to the University is a process of mutual selection. It is hoped that those students who seek admission will also be the kind of students sought by the University: those who will benefit from the educational opportunities afforded by the University; those who will be stimulated and challenged by doing undergraduate work in an environment that includes scholarly research and graduate study; those who are committed to becoming contributing members of the University. Students are selected for enrollment primarily on the basis of their academic competence and without regard to race, sex, religion, age, color, creed, national origin, disability, or sexual orientation, and without discrimination against disabled and Vietnam era veterans.

The University has been authorized under federal law to enroll nonimmigrant alien students.

All freshmen pursuing four- or five-year degree programs are admitted to University College, a college of advising and academic student services. Many students who are undecided about their choice of major use the year or two in which they remain in University College to explore

their interests before declaring a major. Students who have identified their prospective majors are assigned faculty advisors in that area and follow their chosen course of study while in University College. The University evaluates applicants' credentials in terms of their stated prospective majors and the space available in professional programs with limited enrollments.

Admission Requirements. Admission to the University is competitive, and primary emphasis in the review process is placed on a student's high school record, the quality of courses taken, and the grades earned. Performance on standardized tests (SAT or ACT), extracurricular activities, alumni tradition, and letters of recommendation are considered. The students offered admission for fall 1993 presented an average class rank in the top 30 percent of their high school class, with SAT scores of approximately 1,000 combined.

SAT or ACT tests are required for freshman candidates, but transfer students from another college are assessed mainly on their earlier college records. Each candidate is given individual consideration; however, a minimum of 18 units of college preparatory work is expected: four units in English, three in algebra and plane geometry, two in a physical or natural science, two in history or a social science, two in a foreign language, and additional units that meet the requirements of the college in which the candidate expects to major. All students are encouraged to select their additional units from the arts, humanities and foreign languages, mathematics, social sciences, or laboratory sciences. Candidates for the College of Business Administration, and majors in chemistry, computer science, and physics, must complete four units of mathematics (trigonometry). Candidates for the College of Engineering should select chemistry and physics. Applicants to the Bachelor of Music degree program must audition and must contact the Department of Music for specific requirements.

Students presenting official GED results in lieu of a high school diploma must fulfill the University's entrance requirements in mathematics by presenting secondary school or college records that include successful completion of Algebra I, Algebra II, and geometry.

International candidates must submit certified copies of original documents (in

the original language) and notarized translations in English. Candidates must meet the University's academic requirements. They must show that they possess funds for their first year and that funds for subsequent years will be available. If government or reserve bank permission is required to transfer funds from the student's country to the United States, a notarized copy of the permission is required. No financial assistance is available to international students.

Application Procedures. Students should discuss their plans for study at the University with their academic counselors as early as possible to establish realistic goals and program selections. Admissions counselors at the University will be glad to correspond with students about individual problems. Requests for application forms and information should be sent to the Undergraduate Admissions Office, University of Rhode Island, Green Hall, Kingston, RI 02881-0807.

Inquiries from international students concerning nonimmigrant visas, transfers, funding, etc., should be sent to the Office of International Students and Scholars, University of Rhode Island, 37 Lower College Road, Kingston, RI 02881-0820. On- and off-campus housing inquiries should be sent to the Office of Housing and Residential Life.

Students are enrolled at the beginning of the fall semester in September and at the beginning of the spring semester in January. High school seniors are urged to submit applications early in their final year of preparatory study, since the University reviews applications on a continuing basis as soon as complete credentials are submitted. Applicants are notified as soon as decisions are made. The closing date for fall term applications is March 1, and most decisions are reported in February, March, and April. The closing date for spring term application is November 1.

Early action is taken on the application of any freshman candidate who has established a superior academic record and above-average scores on the CEEB Scholastic Aptitude Test, and whose potential as a superior student is reflected in the secondary school endorsement. Applications meeting these qualifications which are clearly labeled "early action candidate" are considered on a priority basis if filed before December 15.

Entrance Tests. All freshman candidates for admission must take the Scholastic Aptitude Test (SAT) or the American College Testing Program Test (ACT). Applicants who have been away from formal studies for at least three years should contact the Undergraduate Admissions Office about entrance requirements.

Applicants are encouraged to take the SAT as early as possible in their senior year; delay beyond January materially reduces a candidate's prospects for a timely decision. Full information concerning this test may be obtained from local high schools or by writing to CEEB Headquarters at P.O. Box 592, Princeton, NJ 08540. Further information regarding the ACTs is available from the American College Testing Program, P.O. Box 168, Iowa City, IA 52243.

Students whose first language is not English are encouraged to submit official Test of English as a Foreign Language (TOEFL) examination results to supplement their SAT verbal scores. International candidates for whom English has not been the language of instruction must submit official TOEFL examination results of 550 or better. The TOEFL examination is administered by the Educational Testing Service, Princeton, NJ 08540.

Interviews. Personal interviews are recommended, but they are not required of all applicants. It would be impossible for the admissions staff to interview all candidates, but individual conferences can be arranged with professional staff and student interviewers on a space-available basis.

Question and Answer Sessions. These are scheduled several afternoons each week during the year. Students and their parents are invited to participate in these meetings to get acquainted with the University. Visitors are asked to phone ahead to confirm available dates. Call 401-792-9800.

Campus Tours. Students conduct daily tours of the campus for visitors, Monday through Saturday, while classes are in session. Group tours for high schools and other organizations may also be arranged. For more information, call 401-792-9800. Tours of the Narragansett Bay Campus and the Graduate School of Oceanography may also be arranged. Call 401-792-6211 for details.

Admissions Inquiry Line. Candidates may check the status of their applications from a touch-tone telephone from November through May, Monday through Friday, from 8:30 a.m. to 4:30 p.m. Eastern time. Instructions are forwarded to candidates when applications are received.

Early Enrollment (Early Admission). Students who have completed their junior year of high school with superior records are eligible for early admission. A part-time study program may be arranged for students who wish to begin college study in their senior year while continuing their high school work. A full-time program may be arranged for those recommended for college admission without completion of the standard preparatory program.

Early admission students will normally have completed: three years of English, three years of mathematics, two years of foreign language, two to three years of social studies or history. Students should be academically competitive within their high school class, have corresponding scores on the College Board PSAT, SAT, or equivalent tests, and the endorsement of their school.

Interested persons should plan with their high school counselor early in their junior year and direct further inquiries to the Undergraduate Admissions Office.

Advanced Standing

Advanced placement for freshmen is granted to students who have completed college-level courses in a high school participating in the Advanced Placement Program and have passed with a grade of 3.00 or better the CEEB Advanced Placement Examination in the following subject areas: art history, art studio (drawing and general), biology, chemistry, computer science (AB), English (language and composition; literature and composition), French (language and literature), German (language), history (European and United States), Latin (Vergil and Catullus-Horace), mathematics (calculus AB and BC), music theory, physics (B; C, mechanics; and C, electricity and magnetism), Spanish (language and literature). In addition, students can take proficiency examinations administered by departments of the University to be granted advanced placement. Entrance with advanced standing can accelerate the com-

pletion of degree requirements, or it can enrich the undergraduate program with greater scope for elective or advanced courses.

Transfer students who have attended, or are attending, another college or university must have official transcripts sent directly from the institution, whether or not they expect or desire credit for such work; their high school record must also be submitted. Transfer candidates must be in good standing and eligible to return to the institutions they attended previously. Credit will not be awarded for course work taken prior to admission to the University which is disclosed after acceptance. A minimum cumulative quality point average of 2.50 is required, but most successful applicants have much higher quality point averages. Certain programs may require a higher quality point average or specific prerequisite courses. Candidates accepted with transfer credit are classified as freshmen, sophomores, juniors, or seniors according to the number of credits accepted for transfer. The transfer of General Education credits is described on page 10. Priority consideration will be given to applicants presenting 24 or more transferable credits. Students may apply to the teacher education programs only after acceptance by an academic department. Some colleges do not enroll new transfer students every semester.

Proficiency Examinations. Students who show evidence of advanced knowledge or who have taken "enriched" programs in high school may be exempt from certain courses and requirements if they take departmental proficiency examinations. A student who successfully passes such an examination earns credits as well as exemption from the course. However, students who, by successfully passing proficiency examinations, have the General Education requirements waived in writing (Cw), mathematics (M), and/or foreign languages or culture (F) must still complete the specified number of credits for their degree programs.

Upperclassmen interested in taking these exams should contact their academic dean. New students may obtain further information during orientation or from their assigned advisor in University College.

College Level Examination Program.

Students who have not been pursuing formal studies for at least three years may take the *CLEP General Examinations* to demonstrate academically measurable learning acquired in nontraditional ways. URI students must secure prior approval from their academic dean to take the exams for credit. Transfer students may receive credit from CLEP General Examinations taken prior to enrollment at URI provided that their scores meet URI standards and provided that their academic dean judges that the CLEP credit does not duplicate other transfer credit.

CLEP General Examinations may be taken in the following areas. URI credits for these are shown in parentheses.

	Minimum score
English Composition (English Composition elective, 3 credits ¹)	460
Humanities (Fine Arts and Literature elective, 6 credits)	420
Natural Science (Natural Science elective, 6 credits)	410
Social Science (Social Science elective, 6 credits)	430
Mathematics (no credit)	

Academic departments may use *CLEP Subject Examinations* as proficiency exams to test students' mastery of the subjects taught by the department. A department that judges a CLEP Subject Examination to be a satisfactory proficiency exam decides what credit should be awarded within the department to students who pass the exam, establishes the minimum score for credit, decides whether students must answer the optional essay questions supplied by CLEP, and decides whether students must pass a supplementary department test, such as a lab exam. The following CLEP Subject Examinations are accepted by departments as proficiency examinations.

Subject (URI credit)	Minimum raw score	Minimum percentile
American Government (PSC 113)	47	38th
American History ² (HIS 141, 142)	45	40th
American Literature (ENG 241, 242)	46	37th

Analysis and Interpretation of Literature (ENG or WRT 103)	49	43rd
Biology (BIO 101, 102)	49	47th
College Algebra– Trigonometry (QBA 101)	49	50th
Educational Psychology (EDC 312)	47	40th
English Literature (ENG 251, 252)	46	38th
General Chemistry (CHM 101, 102, 112; 114)	47	45th
General Psychology (PSY 113)	47	39th
Human Growth and Development (HDF 200 or PSY 232)	47	38th
Introduction to Business Management (MGT 301)	50	50th
Introductory Accounting (ACC 201, 202)	N/A	50th
Introductory Business Law (BSL 333)	51	50th
Introductory Marketing (MKT 301)	50	50th
Introductory Sociology (SOC 100)	48	40th
Western Civilization I ² (100-level HIS elective)	46	52nd
Western Civilization II ² (100-level HIS elective)	47	52nd

Health Questionnaire. Every newly entering student is required to complete a health questionnaire from University Health Services and to provide a certificate signed by a licensed physician giving the dates of immunization against measles and German measles (see page 24).

New England Regional Student Program. Through a cooperative plan sponsored by the New England Board of Higher Education, students from other New England states may enroll in designated programs at the University of Rhode Island which are not offered in their own states. Certain programs at other New England state universities are open to Rhode Islanders on a reciprocal basis. Regional students at the University will be charged the in-state fee plus a surcharge of 50 percent. If at any time a student transfers out of the New England Regional Student Program, out-of-state fees will apply.

Details on the operation of this program are available on request from the New England Board of Higher Education, 45 Temple Place, Boston, MA 02111, or from high school guidance offices. All new undergraduate students apply for regional student status through the Undergraduate Admissions Office as part of the application process. The Office of the Registrar provides information pertaining to this program for students who are already enrolled at the University.

Continuing or returning students claim eligibility by submitting a formal request to the Office of the Registrar prior to the end of the add period of the semester in which regional status is to be effective.

Special Programs for Talent Development. The University encourages the application of economically, socially, and culturally disadvantaged individuals from Rhode Island. To encourage and assist such applicants, the University has instituted recruiting and prematriculation programs. Financial aid is available for students accepted to Talent Development; need is determined by the filing of a Free Application for Federal Student Aid (FAFSA) form.

Interested prospective students should apply to Special Programs for Talent Development during their senior year in high school. Those who have been out of high school for some time and those with an equivalency diploma are also encouraged to apply. Applications and all credentials should be sent to the Undergraduate Admissions Office, University of Rhode Island, Green Hall, Kingston, RI 02881-0807, during the application period between October 1 and March 1.

Readmission. Students formerly enrolled at the University and seeking reentry may obtain applications for readmission at the Office of the Registrar. Readmitted students must make a \$50 advance deposit. All applications for readmission must be submitted to the Office of the Registrar no later than August 15 for the fall semester, and December 31 for the spring semester.

¹ Three additional credits may be earned by completing a writing sample test administered by the College Writing Program.

² Optional essays required.

Registration

All students must register for courses through the Office of the Registrar in order to be properly enrolled.

Early Registration. Matriculated (official degree-seeking) students who meet the eligibility requirements as defined in the *Schedule of Courses* generally register in April and October for the following semester. However, freshmen entering in the fall semester may register at specified dates during the summer as part of the summer orientation program. Additional information is available from the Office of the Registrar.

Late Registration. Students are expected to register for courses before classes begin. Those who are unable to do so may enroll as late registrants in the Office of the Registrar during the first two weeks of classes. A late registration fee shall be charged to students who register on or after the first day of classes (see page 24).

Nonmatriculating Students. Such students must contact the Office of the Registrar for permission to enroll and for registration instructions. Registration for nonmatriculating students begins the week before the first day of classes each semester.

Schedule of Courses. The *Schedule of Courses* is published in March for the fall semester and in October for the spring semester. It is available in the Office of the Registrar. The University reserves the right to cancel courses offered in the *Schedule of Courses*.

Payment of Fees. Arrangements must be made with the Bursar for complete payment of tuition and/or fees. If during the semester it becomes apparent that a student has not met his or her financial responsibilities with the University, the registration for that semester is subject to immediate cancellation.

Drop and Add. Students are permitted to add courses through the first two weeks of classes only. Courses offered by the College of Continuing Education may be added, with approval of the instructor, prior to the third class meeting or by the prescribed University deadline, whichever is later.

Undergraduate and graduate students may drop a course according to official procedures determined by the Office of the

Registrar before midsemester. However, courses dropped after the end of the second week of classes will not affect the fees that have been assessed (see "Reassessment of Fees" on page 23).

If a student has not dropped a course by the end of the drop period, the instructor must submit a grade. A student may drop a course after the end of the drop period only in exceptional circumstances and only with authorization of the dean of the college in which the student is enrolled.

Auditing. Auditors are persons who have permission to attend a course but are not taking the course for credit. Auditing is not permitted in noncredit courses. An auditor may be admitted to a class on a space-available basis with the consent of the instructor as indicated by the instructor's signature on an audit authorization form; this form must be filed in the Office of the Registrar before the end of the "add" period. The course instructor will determine the extent to which an auditor may participate in class activities. An auditor's name will not appear on official class rosters, and the course will not be noted on the student's grade report or permanent academic record.

Flexible Scheduling. Simultaneous enrollment in Kingston classes and College of Continuing Education classes may give scheduling flexibility to students with special time and location restrictions. Students should consult their academic advisor or college dean for further information.

Off-Campus Study. A full-time student who wishes to study at another college or university and use that course work to satisfy graduation requirements at the University of Rhode Island may register for off-campus study. The student must obtain signed approval for the off-campus courses from the dean of his or her college.

Off-campus study includes summer sessions, one or two semesters at another American university, or study abroad. A student may not ordinarily study off campus during the senior year. Students who wish to maintain registration eligibility while studying off campus must register for off-campus study for each semester of absence from the University of Rhode Island, or take an official leave of absence for that period.

Veterans Administration Educational Benefits. Full information describing these benefits can be obtained from your base education officer or from the Veterans Administration Regional Office, 380 Westminster Mall, Providence, RI 02903. A toll-free number for inquiries can be obtained by asking the long distance operator for Enterprise 5050.

Veterans enrolled in Kingston Campus courses who are eligible to receive VA educational benefits must notify the Office of the Registrar in person. In order to satisfy Veterans Administration regulations, students who receive VA educational benefits must report all changes in academic status to the veterans registration clerk in the Office of the Registrar. Veterans enrolled in courses through the College of Continuing Education must be certified by that college.

Recipients of VA educational benefits are also governed by the same University policies as are all other students and therefore are responsible for completing those procedures described in the *Schedule of Courses* for effecting changes of status (such as the adding and dropping of courses, change of address, and withdrawal from the University).

Manuals on University Policies. The *University Manual* and the *Graduate Student Manual* further explain the University's policies and procedures concerning the following: 1) the grading system and standards of progress required of the student by the University and the conditions for dismissal for unsatisfactory grades; the allowed probationary period; and the conditions of reenrance for academically dismissed students (see *University Manual*, Chapter 8, and *Graduate Student Manual*, Appendix A); 2) the records of academic progress maintained by the University and furnished to the student (see *University Manual*, Chapter 8; and *Graduate Student Manual*, Appendix C); and 3) the policies and regulations relating to student conduct and conditions for dismissal for unsatisfactory conduct (see *University Manual*, Chapters 5 and 6, and *Graduate Student Manual*, Appendix A).

Change of Address. It is the responsibility of the student to report changes of local or home address to the Office of the Registrar or the Office of Housing and Residential Life, as needed.

EXPENSES AND STUDENT AID



Expenses

Charges and fees set forth in this bulletin are subject to change.

In addition to the University fees outlined below, a student should expect to spend about \$600 per academic year for books and supplies and should allow for additional expenditures for travel and personal needs.

All charges are billed by the semester and are due and payable on receipt of the bill or by the due date indicated on the bill.

Full-Time Students Pay per Year

In-state fee (general fee)	\$3,004
Out-of-state fee	10,330
Regional student fee ¹	4,506
Memorial Union fee	196
Student Activity fee	230
Recreation fee	70
Student Health Insurance plan	480
Student Health Services fee	408
Registration fee	40
Library/Information Services fee	\$100
Arts and Culture fee	\$64
Athletics fee	\$130

Students Living in Residence Halls Add

Room rent	\$3,020-3,316
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Meal plans²:

<i>Board plans</i>	
Any 20 meals (Mon.-Sun.)	\$2,390
Any 15 meals (Mon.-Sun.)	2,210
Any 10 meals (Mon.-Fri.)	2,008

Points plans

Level A (44,200 points)	\$2,064
Level B (56,600 points)	2,192
Level C (70,000 points)	2,330
Level D (83,400 points)	2,468

Students Living in a Fraternity or Sorority Add

Average room rent	\$2,330
Average board	2,200

Part-Time Students

Part-time students registered for up to 11 credit hours per semester are charged the fees below:

Tuition, per credit hour	
Rhode Island residents	\$125
Out-of-state students	430
Regional students ¹	188
Off-campus study per semester	145
Registration fee per semester	20
Memorial Union fee per credit hour	8
Student Activity fee per semester	57
Library/Information Services fee per credit hour	4
Arts and Culture fee per credit hour	3

Additional Fees. A laboratory/clinical fee of \$25 will be charged for each laboratory or clinical course. Engineering students will pay an engineering fee in their third and fourth years: \$100 per semester for full-time students, \$9 per credit for part-time students. Pharmacy students will pay a pharmacy fee in their third, fourth, and fifth years: \$100 per semester for full-time students, \$9 per credit for part-time students. When near completion of studies, but prior to submitting a petition to graduate, each student must pay a \$30 graduation fee.

Reassessment of Fees. Students may drop and add credits during the first two weeks of each semester (add period) without affecting their initial fee assessment. Fees are reassessed and adjusted at the end of the add period to reflect any drop/add transactions processed by the Office of the Registrar. Any reassessment of fees after the close of the add period occurs only for part-time students who add credits and full-time students who add credits beyond the credit overload limit. *Note: Dropping credits after the end of the add period does not reduce term bills.*

Credit Overload Fee. A credit overload fee is charged to all undergraduate students who register for more than 19 credits per semester and to all graduate students who register for more than 15 credits per semester. It is charged per credit above the 19- and 15-credit limits, and is assessed according to residency: \$125 for in-state students, \$430 for out-of-state students, and \$188 for students in the regional program. Enrollment at the Kingston and Providence locations is combined when determining this fee. *Note: Dropping overload credits after the end of the add period does not reduce tuition charges.*

Kingston and CCE Enrollment. All undergraduate students who are full time because of combined enrollment at both the College of Continuing Education and the Kingston Campus (12 credits and over) are assessed the standard Kingston fees at the full-time rate when enrolled for at least seven credits on the Kingston Campus. Students enrolled at the Kingston Campus for less than seven credits are charged the Kingston fees at the part-time rate. *Note: Dropping credits after the end of the add period does not reduce tuition charges.*

Resident Student Status. A student who is a resident of the state of Rhode Island pays the in-state fee, but a student from another state or a foreign country who is in Rhode Island primarily for educational purposes, even though he or she remains in the state during vacation periods, is considered a nonresident and pays the out-of-state fee.

The parents or legal guardians of a minor student must have been residents of the state for one year immediately preceding the first class day of the first term of a student's registration for that student to claim resident student status. A nonresident student who reaches 18 years of age while a student does not by virtue of that fact alone become a resident student.

An "emancipated student" must establish the same bona fide residency for in-state tuition exemption. An emancipated

¹ See page 21 for a description of the New England Regional Student Program.

² Students can obtain a Ram Card Account, which is an optional debit card account accessed through the student ID card. Students who participate in this program may spend their money at the URI Bookstore, the Ram's Den, the America's Cup Room, as well as other locations. A minimum deposit of \$50 is required. Unused dollars are transferable from semester to semester until graduation.

student is one who has attained the age of 18, and whose parents have entirely surrendered the right to the care, custody, and earnings of the student and have not claimed the student as a dependent for tax purposes for two years. If any of these conditions is not met, he or she is presumed to be an unemancipated student.

Dependents of members of the armed forces, as well as members of the armed forces stationed in the state on military orders, are entitled to classification as resident students.

The Dean of Admissions classifies each student admitted to the University as a resident or nonresident student on the basis of all relevant information available. A student may appeal the decision to the Board of Residency Review. The preceding information is a summary of the regulations governing student classifications for tuition purposes. The complete text of the regulations adopted by the Board of Governors for Higher Education may be obtained from the Office of Admissions.

Tuition Waiver for Senior Citizens. Any Rhode Island resident senior citizen who submits evidence of being 60 years of age or over, and of having a household income of less than three times the federal property level, will be allowed to take courses at any public institution of higher education in the state with the tuition waived. However, students who qualify for waivers must apply for financial aid. Any aid received must be applied toward the amount waived. Admission into particular courses will be granted on a space-available basis and at the discretion of the receiving institution. All other costs of attendance are paid by the student.

Tuition Waiver for Unemployed. Any individual who submits evidence of currently receiving unemployment benefits from the state of Rhode Island, of having a household income of less than three times the federal property level, and of not being claimed as a dependent by a parent (or someone else) will be allowed to pursue course work at any public institution of higher education in Rhode Island with tuition and the registration fee waived. However, students who qualify for waivers must apply for financial aid. Any aid received must be applied toward the amount waived. Individual students will be responsible for all other costs of attendance. Admission into particular courses will be granted on a space-available basis and at

the discretion of the particular institution. This waiver also applies to any Rhode Island resident who submits evidence of residency and of currently receiving unemployment benefits in another state.

Student Fees. A nonrefundable fee of \$30 for Rhode Island residents, \$45 for out-of-state residents, must accompany a student's application for admission. A fee of \$30 is required to reactivate an application.

An enrollment deposit is required from every accepted student and is applied to the first-term bill. In-state students pay a \$150 deposit. Out-of-state and regional students pay a \$300 deposit. The enrollment deposit is 50 percent refundable until June 1, or 25 percent refundable until August 1, provided that the Admissions Office is notified in writing of the student's intention not to enroll.

Students returning after an absence of one or more semesters are subject to the same application fee and advance deposit as entering freshmen.

As part of the Student Activity fee of \$230, each student is assessed \$80 per year, which is distributed by the Student Senate to support a wide variety of student programs and activities. The balance of the fee supports the total budgets of Career Services, Multicultural Student Services, the Office of the Dean of Students, the Office of the Vice President of Student Affairs, and the Office of the Assistant Vice President for Campus Life. A Memorial Union fee of \$196 per year is also assessed.

Late Fees and Special Fees. A late registration fee is charged to students whose registration is not completed before the first day of classes. The fee is \$20 during the week classes begin and \$55 thereafter.

Expenses connected with class trips and practice teaching are charged to the students concerned.

Applied Music Fees. Students taking applied music courses, except for composition, are charged an additional fee of \$95 for one credit (half hour of a private lesson per week) and \$190 for two, three, or four credits (one hour of a private lesson per week). Applied music courses for which students are charged an additional fee are MUS 110, 210, 310, 410, and 510.

Student Nurses' Fees. Beginning in the sophomore year, student nurses must purchase authorized uniforms and nursing equipment. The approximate cost is \$250.

Transcripts. Each student who attends the University is entitled to official transcripts without charge. Students can obtain a copy of their transcripts by submitting a written request to the Office of the Registrar. A transcript service fee of \$25 is assessed to all students in their first semester of enrollment at the University.

Transcripts will not be issued to students who have any unpaid financial obligation to the University.

Student Health Services Fee. The Student Health Services fee is mandatory for all full-time undergraduates, all international students and their spouses, and all full-time graduate students. Part-time students at the Kingston Campus may elect to pay the fee. It covers all outpatient care and health services with the exception of laboratory, X-ray services, special OB/GYN procedures, orthopedic appliances, and certain pharmacy services. Outpatient care consists of all nursing, physician, and health education services, plus certain pharmacy services.

Student Health Insurance Plan. It is the policy of the University of Rhode Island that all students have current health insurance in order to provide coverage for unexpected, extended, and expensive care resulting from accidents and illnesses that are not included in the Student Health Services fee. All international students, their spouses, and their dependents must enroll in the Student Health Insurance plan. All other students are required to enroll in this plan unless evidence of comparable coverage in another plan is provided and the student completes, signs, and returns a waiver card to Health Services prior to the end of the add period (normally the first two weeks of school). **Unless the insurance is waived, the student will be billed.** Waiver forms are normally mailed to the student by Health Services. The forms are also available at Health Services in the Potter Building. Please refer to the Student Health Insurance brochure for an explanation of benefits.

Health Questionnaire. Every newly entering student is provided a health questionnaire from Health Services. These questionnaires must be completed and returned promptly. They provide Health Services with basic health information prior to the student's arrival on campus. Questionnaires are distributed only after admission to the University and play no part in the process of acceptance to the University.

TB Testing and Measles Immunization

Requirement. In accordance with Section 16-38-2 of the General Laws of Rhode Island, the University must have a certificate signed by a licensed physician giving the dates of immunizations to protect against rubella (German measles) and rubeola (measles) for all incoming students. In addition, the physician must certify that the student has been tested for tuberculosis within the past year. This certificate is included with the questionnaire that is mailed to students. Students failing to comply with this requirement may face sanctions on registration.

University Refund Policies. Refunds of payments to the University will be made according to the following two policies.

Withdrawal of Continuing Students. Continuing students are those who are enrolled for the most previous semester or, in the case of a leave of absence, as of the approved date of leave. Refunds of payments are made to continuing students who officially withdraw from the University or take a leave of absence according to the following scale:

Attendance Period	% Charged	% Refunded
Week 1	10	90
Week 2-4	50	50
Week 5-8	75	25
Week 9 to End of Term	100	0

Under this policy, registration, insurance, auxiliary, and similar fees are **not refundable** as of the first day of classes. Amounts owed by the student and not paid by the withdrawal date are deducted from the refund amount due the student. This scale also applies to first-time students who do not receive Title IV Federal Financial Aid.

Withdrawal of First-Time Students Receiving Title IV Federal Financial Aid. First-time students (those who have never attended the University) receiving Title IV federal aid (Pell, SEOG, etc.) who withdraw from the University are subject to a federally regulated withdrawal refund policy. This policy may change as statutory and regulatory changes covering student financial assistance take effect. Under this policy, the amount of tuition, fees, and room-and-board charges to be refunded is calculated according to the following scale:

Attendance Period	% Charged	% Refunded
Week 1	10	90
Week 2-3	20	80
Week 4	30	70
Week 5-6	40	60
Week 7-8	50	50
Week 9	60	40
Week 10 to End of Term	100	0

The refund is based upon a student's attendance period rounded down to the nearest ten percent but never less than ten percent. Amounts owed by the student and not paid by the withdrawal date are deducted from the residual bill amount when calculating the refund. A reasonable administrative fee not to exceed the lesser of five percent of charges assessed or \$100 is charged.

Examples of refund calculations are available at the Bursar's Office.

For the purposes of refund under both policies, the attendance period begins on the first day of classes and ends on the official date of withdrawal or leave of absence. If an official date is not known, the last known date of attendance is used. The number of weeks in attendance is calculated using the round-up method; i.e., the first day of the second week of attendance constitutes an entire week.

Students who withdraw or take a leave of absence during the add period (the first two weeks of school) are assessed tuition and fees based upon the highest number of credits for which they are registered during this period. Refunded amounts are calculated according to the scales above.

The Student Health Insurance fee is not refundable unless the fee is waived, regardless of the date of withdrawal, since the student is covered for the entire academic year. The fee is cancelled, however, if the student withdraws prior to the first day of classes.

Housing Rates. Following are the rates for University housing for the year 1994-95. For complete information, write to the Director of Housing and Residential Life, Roger Williams Center. All rates are for double rooms. For single rooms, where and when available, \$160-170 per year is added to the double-room rate. Board is mandatory for students living in residence halls.

Residence Halls

\$2,872 Adams, Barlow, Bressler, Browning, Butterfield, Hutchinson, Merrow, Peck, Tucker, Weldin
 \$3,154 Aldrich, Burnside, Coddington, Dorr, Ellery, Fayerweather, Gorham, Heathman, Hopkins
 The average projected room rate for fraternities and sororities for 1994-95 is \$2,330.

Housing and Dining Contract. University housing is contracted for the *entire academic year*. A **nonrefundable** deposit of \$100 is required at the time of application for a room. This deposit will be applied to the first-semester housing bill.

All residence hall rates are quoted for the period specified in the contract. Payments are due in full by the published term bill due date each semester or upon receipt of the bill from Housing and Residential Life. Checks are payable to the University of Rhode Island and should be remitted to the Office of the Bursar.

A student vacating his or her assigned quarters before the end of the period under contract will be held responsible for the total charges for the entire period. No refund will be given when a student moves from University quarters to a private home or decides to commute.

The University is a nonsectarian institution, and resources are not available to construct special diet kitchens for religious, health, or personal reasons. Extreme medical problems are reviewed by a nutritionist. Some medical problems may be accommodated. Students requesting a medical variance from the meal plan must submit for approval a medical variance report from a physician to Dining Services prior to the first day of classes. Application forms may be obtained by contacting the Dining Services central office in the Memorial Union at 401-792-2055.

The University dining system operates on a computerized entry system using the student ID card. This card must be brought to all meals.

Students who withdraw from the residence halls may obtain Dining Services refunds based on the University refund policy.

Indebtedness to the University. Failure to make full payment of all required fees or to resolve other debts to the University (for example, unreturned athletic equipment, overdue short-term or emergency loans, lost library books, debts to the Office of Housing and Residential Life for damages,

and obligations required by the University Student Discipline System) may result in denial of registration for the following semester and/or disenrollment. Appropriate departments will provide the student with notice of the debt, reason for it, and a review, if requested. A student must fulfill all financial obligations to the University before receiving transcripts or a diploma.

Student Financial Aid

Financial aid is money made available from federal, state, local, or private sources which helps students attend the post-secondary institutions of their choice. At the University of Rhode Island, these varied sources are administered by the Student Financial Aid Office in Roosevelt Hall. The financial aid programs are designed to serve students from the widest possible range of society, and all students are encouraged to apply.

In most cases, financial aid will be awarded in a "package" of grants (which do *not* have to be repaid), loans (which have to be repaid), and student employment opportunities (part-time jobs while attending school). The purpose is to assist the students in meeting the costs of attending the University. To continue receiving financial aid, it is necessary to reapply and demonstrate sufficient financial need each year as well as to maintain satisfactory academic progress.

Financial aid to students is awarded without regard to race, sex, religion, age, color, creed, national origin, disability, or sexual orientation, and without discrimination against disabled and Vietnam era veterans.

Financial Need. A student does not have to be from a low-income family to qualify for financial aid, but does have to have "financial need." "Need" is the difference between what it costs to attend the University and what the student and family can contribute from financial resources. Parents, insofar as they are able, are expected to bear primary responsibility for financing a son's or daughter's college education, and the student is also expected to earn a portion of the resources for college expenses, usually through summer employment.

Eligibility. Only citizens, nationals, or permanent residents of the United States are eligible to apply for financial aid. Foreign students desiring information about financial assistance should contact the Office of

International Students and Scholars at the University.

To be considered for financial aid, a person must have been accepted and enrolled at least half time (six credits) as a matriculated student at the University. Enrolled students must be making satisfactory progress toward their degree according to the University's policy on satisfactory progress (see page 27).

Application Procedure. All students are to complete a Free Application for Federal Student Aid (FAFSA). This form is also used to apply for most state scholarships, including those for Rhode Island and Massachusetts. Residents of other states should check with their state scholarship or grant authority to inquire if another form is needed to apply for state scholarship funds. Students should apply for a Pell Grant by checking the appropriate box on the FAFSA.

The awarding of financial aid for the current academic year may require validation and documentation of all information submitted to the Student Financial Aid Office. Therefore, students must provide signed copies of their own and their parents' last U.S. Income Tax Returns 1040/1040A/1040EZ. When and if requested by the Student Financial Aid Office, all tax schedules must also be included.

Application Priority Dates. The FAFSA should be mailed to Federal Student Aid Programs after January 1, and no later than March 2. Applications completed on or before the above priority dates will receive first consideration for financial aid awards; however, applications will be processed as long as funds remain available.

Federal Aid Available

Federal Pell Grants. The Pell Grant is designed to form the foundation of all financial aid received. Each applicant is mailed a set of Student Aid Reports, which must be forwarded to the Student Financial Aid Office. The amount of the Pell Grant is calculated according to the cost of attendance, the number of credits for which the student enrolls, and the Pell Grant Index printed on the Student Aid Report.

Federal Supplemental Educational Opportunity Grant. This program is intended to assist undergraduate students with financial need. First priority is given to students receiving Pell Grants. These awards are available in amounts ranging from \$100 to \$4,000 per year.

Federal Perkins Loan. Eligibility is based on need. Undergraduates may borrow up to \$3,000 for each year of undergraduate study, with a maximum of \$15,000. Graduate students may borrow up to \$5,000 for each year of graduate and professional study. All undergraduate and graduate loans are limited to a total of \$30,000. These loans have a simple interest rate of five percent annually. Interest does not accrue until nine months after graduation, termination of studies, or enrollment for less than half time. Minimum payments of \$90 per quarter are required, and the repayment period may extend up to 10 years. Deferments and cancellations of principal are allowed in certain circumstances.

Nursing Student Loan Program. This program is available to students enrolled in the College of Nursing. The long-term, low-interest loans become due and payable nine months after graduation or termination of nursing studies. The loans are designed to assist financially needy students attain careers in nursing.

Health Professions Student Loan Program. This loan program is restricted to students with financial need majoring in pharmacy.

Federal Work-Study Program. This program provides part-time employment during the school term and full-time employment during vacation periods. The jobs may be either with University departments, or with off-campus, nonprofit, nonsectarian, and nonpolitical agencies. Other institutionally funded employment is also available. A listing of these jobs is maintained by the Student Financial Aid Office.

Federal Stafford Loan Program. All students who complete the Free Application for Federal Student Aid can participate in the Stafford Loan Program. Those students who meet the financial need criteria may receive in whole or in part a subsidized loan where the federal government pays all interest until six months after graduation, withdrawal, or a drop in enrollment status to less than half time. Unsubsidized loans are available for those students who do not qualify for the need-based subsidized Stafford loan. Those eligible to borrow under this unsubsidized Stafford program include independent undergraduate students, graduate and professional students, and certain dependent undergraduate students. The same terms and conditions as for subsidized Stafford loans apply,

except that the borrower is responsible for the interest that accrues while the student is still in school. The annual loan limits are \$4,000 for first- and second-year undergraduates, and \$5,000 for undergraduates in their third year or higher. Graduate and professional students may borrow up to \$10,000. The aggregate loan limits (for full-time students) are: \$23,000 for undergraduates and \$73,000 for graduate and professional students.

Parent Loan for Undergraduate Students (PLUS). Parents who have good credit may borrow up to the cost of education minus estimated and actual financial aid by submitting an application to the Student Financial Aid Office. If the loan is approved, it will be disbursed in multiple installments, usually at the beginning of each semester. The interest rate is variable; the current rate is 6.64 percent and can go no higher than 9 percent. A three percent origination fee is deducted from loan proceeds at the time of disbursement, as well as a one percent guarantee fee.

Family Education Loan (FEL). Credit-worthy parents, an estimate based on debt-to-income ratio, may borrow up to \$15,000 for students through this program. A fixed interest rate of 7.5 percent is charged, and parents can take up to 10 years to repay. A one-time \$25 processing fee is charged for each application. Eligible parents may also take advantage of the home equity options when applying for this loan.

Federal Supplemental Loans for Students (SLS). The SLS program has been merged into the unsubsidized component of the Stafford Loan Program (see page 26) and will no longer exist as a separate program.

University Aid Available

University Grant. The University provides grants to over 1,000 students. To be awarded a University Grant, the student must have demonstrated financial need and a satisfactory academic record.

Arthur L. Hardge Memorial Grant. This grant is awarded to economically and socially disadvantaged residents of Rhode Island who participate in the Special Programs for Talent Development.

T.A. Suddard International Grant. A limited number of partial tuition awards are made to international students, based on financial need. Recipients are chosen by the International Scholarship Committee.

University Scholarships. Scholarship awards require not only financial need but evidence of high academic potential. Some scholarships have specific restrictions, such as place of residence, major, and class year. A list of available scholarships can be found in the Appendix, pages 208–18.

Athletic Grants. These grants are made on the recommendation of the Department of Athletics to athletes who meet the established qualifications. These awards are based on athletic ability rather than on need. Students interested in such assistance should contact the Department of Athletics.

Regular Student Employment. Positions funded by the University are available to more than 1,500 students. Job postings are available in the Student Financial Aid Office.

University Loans. Emergency loans ranging from \$10 to \$200 are available to full-time students. These loans are short-term in nature (14–90 days), and can be made only when there is a means of repayment. Application forms are available in the Student Financial Aid Office.

Other Sources of Aid

Rhode Island State Scholarships and Grants. Undergraduate residents of Rhode Island are encouraged to apply for Rhode Island State Scholarships or Grants. While both are based on need, the scholarships also require a strong academic record in high school. The Rhode Island State Scholarship and Grant Program is administered by the Rhode Island Higher Education Assistance Authority, 560 Jefferson Boulevard, Warwick, RI 02886. Other states offer similar programs; for more information, contact your state's scholarship agency.

There are many additional sources of financial aid available to students who qualify: scholarships from private organizations, clubs, labor unions, fraternities, sororities, and businesses. Students should apply directly to the source if they believe they qualify.

See Appendix, pages 208–18, for a list of loans and scholarships.

Policy on Satisfactory Academic Progress

The Education Amendments of 1980, P.L. 96-374, October 3, 1980, state that "a student is eligible to receive funds from federal student financial aid programs at an institution of higher education if the student is maintaining satisfactory pro-

gress in the course of study he or she is pursuing according to the standards and practices of that institution."

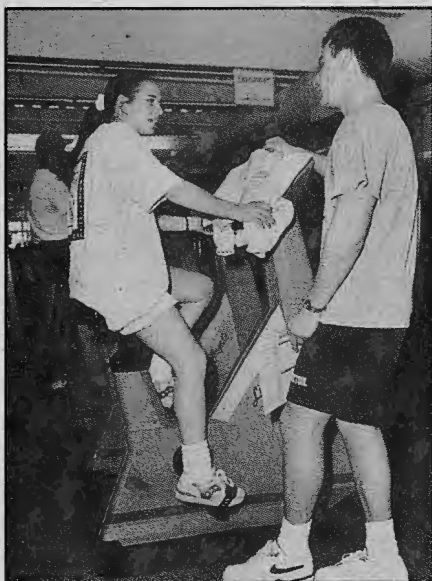
To maintain satisfactory progress at the University of Rhode Island for federal financial aid purposes, the student must be enrolled in a degree-granting program on at least a half-time basis (six credits for undergraduates) for each semester that aid is received. Students enrolled full time may receive aid for 10 semesters in completing what is normally a four-year program. Students completing what is normally a five-year program are permitted to receive aid for the equivalent of 12 full-time semesters. Part-time students may receive equivalent aid, with an accumulation of 12 credits corresponding to a full-time semester. Two full-time (six credits) summer sessions are considered the equivalent of one semester. The determination of a transfer student's eligibility includes the semesters of federal financial aid received prior to attendance at the University of Rhode Island.

Satisfactory progress standards will conform to the University's academic standards, as delineated in the *University Manual*. Students who are placed on academic probation will be notified of the possibility of their loss of federal financial aid eligibility. Students on academic probation for two consecutive semesters and students who are academically dismissed will be ineligible to receive federal financial aid. Criteria for probation and dismissal appear in the *University Manual*. A student who is declared ineligible to receive aid for not maintaining satisfactory academic progress may appeal the decision to the Satisfactory Progress Appeals Committee. Readmission to a program or removal from probation does not automatically constitute eligibility for federal financial aid.

Failure to maintain satisfactory progress for two consecutive semesters will result in the loss of eligibility for federal financial aid until the student is determined by the Student Financial Aid Office to be once again making satisfactory academic progress.

If there are unusual circumstances that result in the student's inability to make satisfactory progress, the student should write a letter of appeal documenting the unusual circumstance(s) and submit the letter to the Satisfactory Progress Appeals Committee, c/o the Assistant Dean of Student Financial Aid.

STUDENT LIFE AND SERVICES



An enriching college life includes a well-balanced mix of academic and extracurricular activities. The University offers a unique blend of student organizations and activities with an emphasis on student-run services and businesses.

Student Orientation

Orientation programs that facilitate the students' entry into the campus community are administered by the Assistant Dean of University College. New students are charged a nominal fee to cover expenses such as room, meals, and materials associated with their orientation program.

Summer Orientation Workshops. All students who are beginning University careers are encouraged to attend a two-day workshop to plan their academic programs, to register for fall classes, to learn what to expect of the University, and to begin to acquire the skills essential for successful transition from high school and home to the University community. These programs are planned to personalize the student's first experience with the University as each one participates, with a group of approximately 15 classmates, in workshop projects. Admitted students receive workshop registration materials in May.

Special programs are planned for parents of new students to coincide with some of the workshop dates. Programs are also provided for older or nontraditional students and other students with special needs.

Transfer Orientation Programs. Students transferring to the University from another institution with 24 credits or less are encouraged to attend the full summer orientation program. Those who are admitted into University College, rather than any of the academic colleges, are invited to attend Transfer Day Orientation. This half-day program is presented immediately after summer orientation. The workshop is designed to acquaint transfer students with some of the unique features and procedures of the University. Orientation information and reservation materials are mailed separately to students admitted with advanced standing (over 24 credits). Students admitted into an academic college will be sent materials concerning their advising needs directly from their specific college.

Orientation for International Students. Programs held just prior to the formal beginning of the academic year assist the international student to function effectively, comfortably, and with reasonable initial success in the new environment. Because successful transition to American culture, values, and institutions as well as to American academic life is crucial, new international students are required to attend the program. Full information regarding arrival dates and orientation program costs are mailed to students in the spring.

Lifestyles

Residence Halls and Dining Centers. Residence halls and boarding facilities are available to students during the regular academic year and during summer sessions. There are 19 residence halls on campus offering a variety of living accommodations including coeducational housing, one all-female hall, a wellness hall, and an all-freshman hall. Priority consideration for residence hall assignments will be given to returning students who have submitted a housing deposit by the posted deadline. A notice will be forwarded to all residence hall students during the spring semester to inform them of the deadline and the housing application procedure. After returning students have been as-

signed, first-year students who have paid their housing deposits by May 1 will be given priority consideration for the remaining spaces. All other students will be assigned on a space-available basis. Assignments of incoming students are made in the order in which their deposits are received. Every effort is made to honor the roommate request. For rates and contracts, see pages 23 and 25.

Applications for residence hall living should be made to the Office of Housing and Residential Life.

Three dining centers and two cash restaurants offer a wide variety of food items and are operated by the University for the convenience of the students. The centers were constructed with bond funds. In order to guarantee payment of these bonds, the University requires that all students living in residence halls purchase a meal plan.

Fraternities and Sororities. About 1,950 students participate in the fraternity-sorority system, which sponsors 23 houses designed for congenial small-group living. The staff of the Office of Campus Life advises these groups. The Greek houses promote scholarship, citizenship, and small-group living. Purchasing and business management for these houses is provided by a private corporation controlled by the fraternity and sorority members. The average room-and-board charge for fraternities and sororities is approximately \$200 less than for University residence halls and dining centers.

Commuting from the Family Home. Some students commute to the University from their family home. The advantages of home cooking, privacy, and lower costs are balanced against numerous challenges and opportunities: acquiring information about all aspects of the University; coping with transportation problems; balancing old and new relationships; budgeting one's time between academics, work, and home; and taking advantage of evening events on campus. Various services are coordinated by the Office of Student Life to meet commuter needs. Dining Services offers special meal plans for commuters; Health Services provides a satellite clinic of preventive services; the Commuter Center is a clearinghouse of information providing quick and accurate answers to questions about University life. A car-pool matching service is available in the Memorial Union Commuter Lounge.

Commuting from "Down-the-Line." A number of students live in houses or apartments in the southern Rhode Island area known as "down-the-line." Juniors and seniors often choose to move off campus and live within a 10-mile radius of the campus where summer homes are rented to students for the school year. Typically, a student will pay from \$300 to \$350 a month, plus utilities, for each bedroom in a furnished house. The majority of winter residents in these down-the-line summer communities are students who patronize nearby supermarkets, laundries, restaurants, shopping centers, and recreational facilities. Many commute by car pool or bus. An off-campus housing listing service is maintained in the Office of Housing and Residential Life. A brochure describing other commuter services is available from the Commuter Center, 401-792-2828.

Older Students. Over 1,800 students on the Kingston Campus are over 25 years old. There is a student organization called Older Student Association (OSA) for these men and women, who chose not to, or were unable to, attend college right after high school. Some are married, with family responsibilities. Some also have jobs and are part-time students. Some older students are attending school with G.I. Bill benefits. Some have retired from a first career and want to prepare for a second. The OSA plans a variety of social and educational programs and provides space in the Memorial Union for studying, taking breaks, or meeting with other students. Services coordinated by the Office of Student Life include an orientation designed to meet the needs of nontraditional students.

Women Students. Women students make up more than half of the student population. A Women's Center, administered by the Office of Student Life, provides specific resources to help women grow to their full potential. In addition, it coordinates lectures, programs, and activities of special interest to women. The Women's Center is located on campus at the corner of Alumni Avenue and Plains Road and has a lounge, a library, and meeting rooms.

Multicultural Students. Approximately 800 students use a variety of services for multicultural students. African-American, Native American, Asian, Latino, and Cape

Verdean students have formed special interest groups to further meet their needs. The Multicultural Student Center (formerly the Uhuru SaSa House) serves as a gathering place for leisure, meetings, workshops, and various cocurricular activities. Counseling, programming, and other services are provided by the director and staff of Multicultural Student Services.

International Students. Approximately 1,000 international undergraduate students, graduate students, visiting scholars, faculty, and their dependents are advised and served by the Office of International Students and Scholars. Assistance is provided in the social, personal, financial, housing, and immigration areas. All communications from international faculty and scholars concerning nonimmigrant visas are also handled by this office. The International Student Association and a number of national student organizations provide students with the opportunity to participate in cultural activities, and the University's International Center serves as a meeting place for study, social events, and other cocurricular activities.

Students with Disabilities. Approximately 500 students have identified themselves as disabled. A full range of services is offered by the University through the Office of Student Life. Individuals who need disability assistance, sign language interpretation, or use of an FM personal sound system for University programs or activities should call 401-792-2285 (TDD/voice) 72 hours in advance. For more information about individualized services and accommodations, please contact the Assistant Director of Student Life for Disability Services.

Student Government

The Student Senate is a legislative body that represents the students to the administration and the faculty and supervises extracurricular activities. It also distributes the Student Activity fee among the various student organizations through its finance committee. Individual residence halls form their own governments. The Interfraternity Council supervises fraternity affairs and the Panhellenic Association governs sorority life. The Commuter Association provides social and other assistance to commuter students.

University Student Discipline System

Administered by the Office of Student Life, the University Student Discipline System is designed to promote student growth and to preserve the atmosphere of learning necessary to the well-being of all students. Community standards of behavior and University policies for students are published in the *Student Handbook*. The Student Discipline System receives complaints or allegations from aggrieved parties, the available facts are gathered and evaluated, and the case may be referred for formal action by one of the University boards or by administrative action (if the student admits responsibility). Sanctions range from "no further action" to suspension or dismissal from the University and may include education, counseling, fines, or other conditions relating to the nature of the violation.

Student Activities

Approximately 85 student organizations exist in which students can become involved. The organizations may be political, academic, or media-related; many represent special-interest groups. Thousands of students participate in the activities sponsored by these organizations.

Lectures and Arts Programs. Lectures and arts programs are presented throughout the year to enrich the more formal academic program of the University. Visiting scholars are invited to give lectures of general and specialized interest. Programs are sponsored by several different offices and student organizations. The Student Activities Office presents a popular weekly film series and other special events. The Student Entertainment Committee sponsors an extensive entertainment series featuring concerts, local and regional musicians, and lecturers of national and international prominence. These events are funded by student fees, and opportunities abound for students to become involved in selecting, planning, and coordinating them.

The University Student Leadership Program. This program, which is coordinated by the Student Activities Office, offers a credit course and noncredit cocurricular workshops and seminars. Students have the opportunity to become involved in the credited FLITE (First-year student Leaders

Inspired To Excellence) program during their first year. Workshops, seminars, and an upper-level course address leadership issues and help students develop leadership skills as they participate in student organizations and various experiences of campus life.

Student-Run Businesses. The Memorial Union offers a number of opportunities to run businesses under full-time supervision but with a large amount of independence. Enterprises such as the food service units, the flower shop, the music shop, and the copy center allow for management training and for excellent work experience. Other student-controlled businesses include the fraternity and sorority cooperative buying service and the various residence hall cooperatives for purchasing food and sundry items.

Athletics and Recreation. The Department of Athletics and Recreation is committed to providing recreational opportunities to students, faculty, staff, and alumni. The department seeks to complement the University's academic goals by enhancing physical, emotional, and social well-being through leisure activities and lifetime involvement in sports.

The Mackal-Keaney-Tootell Athletic and Recreation Complex provides a wide range of facilities in the Mackal Field House, Keaney Gymnasium, and Tootell Physical Education Center. The Mackal Field House offers a six-lane, 200-meter indoor track; four multipurpose courts for basketball, tennis, and volleyball; motorized court-divider netting enabling simultaneous use of the track and courts; a gymnastics training center with two in-ground, foam-filled pits; and three fitness rooms containing a complete circuit of Cybex/Eagle variable resistance weight training machines, plate-loading machines, lifecycles, stair climbers, treadmills, and rowing machines. Keaney Gymnasium offers a 4,000-seat arena and men's and women's locker rooms. And the Tootell Physical Education Center offers an aquatic center with competitive, instructional, and diving pools; East and West Gymnasium with basketball, volleyball, and badminton courts; a football team weight room; a women's athletic team weight room; and a dance studio.

Outdoor facilities include the Meade Football Stadium, 12 tennis courts, softball and baseball fields, an all-weather track, varsity field hockey and soccer fields, two

beach volleyball courts, and numerous practice fields for recreation, intramural, club sport, and intercollegiate athletic activities.

Women's intercollegiate teams participate in Division I basketball, field hockey, gymnastics, soccer, softball, volleyball, cross country, indoor and outdoor track, swimming and diving, and tennis.

Men's intercollegiate teams participate in Division I-AA football, and in Division I baseball, basketball, golf, soccer, swimming, tennis, cross country, and indoor and outdoor track.

Competitive club sport teams participate in sailing, crew, ice hockey, men's volleyball, water polo, rugby, lacrosse, cycling, fencing, skiing, equestrian riding, and cricket. The Intramural Sports Program offers approximately 20 different sport activities and leagues throughout the year for all-male, all-female, and coeducational teams.

In addition to membership in the Atlantic Ten Conference, the University holds membership in the Yankee Conference (football), the National Collegiate Athletic Association, the Eastern College Athletic Conference, and the New England Intercollegiate Athletic Association.

Honor Societies. The University has chapters of a number of national honor societies, election to which is a recognition of accomplishment. The Society of the Sigma Xi is the scientific honor society, Phi Beta Kappa is a national liberal arts honor society, Phi Eta Sigma is a national honor society for freshmen, Phi Kappa Phi and the Golden Key are national honor societies for general scholarship, and Mortar Board recognizes scholarship and leadership. In more specialized areas are the following: Alpha Delta Sigma (advertising), Alpha Sigma Lambda (continuing education), Alpha Kappa Delta (sociology), Alpha Zeta (agriculture), Beta Alpha Psi (accounting), Beta Gamma Sigma (business), Kappa Delta Pi (education), Delta Pi Epsilon (business education), Dobro Slovo (Slavic), Eta Kappa Nu (electrical engineering), Lambda Kappa Sigma (women's pharmacy), Lambda Tau (medical technology), Omicron Delta Epsilon (economics), Omicron Nu (home economics), Phi Alpha Theta (history), Phi Sigma (biological science), Phi Sigma Iota (foreign languages, literature, and linguistics), Pi Delta Phi (French), Pi Mu Epsilon (mathematics), Pi Sigma Alpha (political science), Pi Tau Sigma

(mechanical engineering), Psi Chi (psychology), Rho Chi (pharmacy), Sigma Delta Pi (Spanish), Sigma Iota Epsilon (Management), Sigma Phi Alpha (dental hygiene), Sigma Pi Sigma (physics), Sigma Theta Tau (nursing), and Tau Beta Pi (engineering).

Other Organizations. In addition to intercollegiate athletic teams, a number of organizations represent the University in competition, exhibitions, and public performances. The University Band, Chorus, and Orchestra are under music department direction, and students may receive credit for participation in any one of these. The University Theatre, under the direction of the Theatre Department, presents several plays each year. The URI Debate Council is directed by members of the Department of Communication Studies and participates in intercollegiate debates. The Cheerleaders are active at varsity football and basketball games and rallies.

There are about 30 professional organizations on campus related to academic areas, and there are a number of groups serving social, recreational, cultural, religious, and political interests.

Students publish a newspaper four times a week, a monthly literary magazine, a monthly publication of political and social commentary, and a yearbook. Radio station WRIU, with local AM and FM reception that reaches all of Rhode Island and parts of Connecticut and Massachusetts, is student-run and operates 365 days a year. Also, there is a 24-hour student-run ambulance service.

Student Services

Career Services. Career Services in Roosevelt Hall helps students assess goals, develop skills, and implement career objectives. All students, including freshmen, may seek information and assistance at this office. It is staffed by professional career advisors and planning specialists who provide individual advising, non-credit workshops, and on-campus interviews with a broad range of potential employers. The Career Services staff helps students with job and career inquiries, resumé and cover letter writing, job search methods, and research concerning potential employers.

The Career Library at Career Services houses written materials, videotapes, self-assessment tools, computer programs, brochures, and company literature. A variety

of materials provides information concerning specific careers, job openings, graduate programs, internships, and training programs. Individual publications are available upon request. Through Career Services, students may also attend special programs on careers and informational briefing sessions offered by employers. Each year, 200 to 250 companies and organizations conduct on-campus interviews for full-time jobs after graduation.

Counseling Services. The Counseling Center is staffed by professional counselors, psychologists, and social workers. It offers short-term individual counseling and a variety of skill-building and support groups to help students cope successfully with demands. The Counseling Center provides assistance to students in areas such as adjusting to university life, coping with stress, building satisfying relationships, and developing more self-esteem.

The Counseling Center also administers professional examinations such as the Miller Analogies Test, the Graduate Record Examinations, the Law School Admissions Test, the Medical College Admission Test, the National Teacher Examinations, and the Graduate Management Admission Test.

University Chaplains. The University chaplains are active in providing religious services, in counseling, advising campus groups, teaching, and programming. The chaplains are available to all students, staff, and faculty on a 24-hour basis. The six chaplains represent the Roman Catholic, Jewish, Episcopal, and Protestant communities; referrals are available to representatives of other faiths.

Memorial Union. The center for campus activities, the Memorial Union houses a wide variety of educational, social, cultural, and recreational services and facilities. These include meeting and conference rooms, lounges, a browsing room, study rooms, a darkroom, a radio station, campus newspapers, a games room, offices for student organizations, student technical services, a convenience store, a cafeteria, a restaurant, an optical shop, a music shop, a ballroom, a party room, and a scheduling and information office.

Among the services provided are a travel agency, a unisex hair salon, a credit union, a copy center, a pizza shop, an ice cream and pastry shop, a bookstore, and a flower shop.

A student board of directors working with the director and staff of the Memorial Union and Student Activities Office determines policy for the Union and plans a full program of social, cultural, intellectual, and recreational activities.

Health Services. Located in the Potter Building, University Health Services offers special clinics¹ in gynecology, family planning, internal medicine, surgery, orthopedics, nutrition, psychiatry, and dermatology, as well as general medical and nursing care, laboratory, X-ray, and pharmacy. Allergy injections are given, provided the vaccines are supplied.

Outpatient services during the academic year are available seven days a week, 24 hours a day, except for certain holidays or periods when the University is closed. Physicians are available either for direct services or on call. Nurses are on duty at all times during the academic year. Specialists are available by appointment only at specific times.

Hospital care is available in the local community. All medical expenses incurred outside the University's Health Services are the responsibility of the student. Therefore, students are required to have adequate health insurance coverage (see the Health Services brochure "To Your Health"). Students who choose a private physician must assume responsibility for expenses incurred.

The Health Education Department is located in the rear of the Potter Building. Health Education is designed to provide a variety of services to promote and enhance personal health and well-being. Information that encourages a healthy lifestyle is provided. The department sponsors wellness clinics, outreach activities, and awareness days, and dynamic peer educators offer various dormitory and Greek workshops. A registered dietitian is available at the department, by private appointment, for nutrition counseling and education.

Learning Assistance Center. The Learning Assistance Center, located in Roosevelt Hall, assists students seeking to improve their study techniques. Services are offered to students on an individual basis, in group workshops, and through peer tutoring. Individual sessions and workshops cover a range of topics including time management, strategies for improving reading and memory, test anxiety, and

systems for taking notes. Peer tutoring in high-risk courses is offered at regularly scheduled times throughout the semester.

Confidentiality of Student Records

Procedures for the release and disclosure of student records maintained by the University are in large measure governed by state and federal laws. Where the law is silent, the University is guided by the principle that the privacy of an individual is of great importance and that as much information in a student's file as possible should be disclosed to the student on request. A current or former student has the right to inspect and review official records, files, and data directly related to that student. This right does not extend to applicants, those denied admission to the University, or those who were admitted but did not enroll. Some records are not available to students.

Third parties do not have access to personally identifiable records or information pertaining to a student without the written consent of the student who specifies that the records be released. Parents are considered third parties.

Detailed guidelines for the release and disclosure of information from the student records are available from the Office of Student Life. These guidelines comply with the legal requirements of the Family Educational Rights and Privacy Act of 1974, as amended.

¹ Specialties are subject to availability of physicians and to financial resources.

UNIVERSITY COLLEGE

Diane W. Strommer, *Dean*
 Sarah H. Rockett, *Assistant Dean*
 Jayne Richmond, *Assistant Dean*
 Pamela Baily, *Academic Counselor*
 Winifred P. Kelley, *Academic Counselor,*
Athletes

University College offers incoming students a broad range of advising services and the opportunity to explore the variety of courses and programs available at the University before they commit themselves to a major in a degree-granting college. All first-year students are enrolled in University College except registered nurses. Through its strong program of academic advising by faculty, University College's purpose is to assist new students in making a smooth transition to the University and to provide special assistance, programs, and events for freshmen and sophomores.

Advisors, who have regular office hours at University College in Roosevelt Hall, are faculty members who represent each of the majors in the degree-granting colleges. Each student is assigned an academic advisor who is a specialist in the area in which the student intends to major or who has a particular interest in working with students who are undecided about their choice of a major. Advisors help students select and schedule the right courses, become familiar with University procedures and programs, and obtain whatever assistance they need.

If more students seek access to a program than can be accommodated due to limited facilities or faculty, those students who have shown the highest promise for academic success in the program will be admitted first. Where such limitations exist, the student must apply for acceptance in the program under conditions established by the specific department or college. This applies specifically to programs that have been declared "oversubscribed" by the Vice President for Academic Affairs. Students who cannot be admitted to the program of their first choice can request entry into another program for which they have satisfied the entrance requirements, or they can spend one or two additional semesters in University College preparing to qualify for another program.



COLLEGE OF ARTS AND SCIENCES



Steffen H. Rogers, *Dean*
Winifred E. Brownell, *Associate Dean*
Joyce P. Allen, *Student Affairs*
Jonathan L. Blaney, *Business Manager*

The College of Arts and Sciences has two main objectives: first, to enable all students to understand our intellectual heritage, the physical and biological world in which we live, and our social, economic, and political development; and, second, to provide programs of professional education in selected fields as well as a strong foundation for graduate study.

The college has programs of study leading to the following degrees: Bachelor of Arts, Bachelor of Science, Bachelor of Fine Arts, and Bachelor of Music.

For information on prelaw, pre-physical therapy, premedical, pre dental, pre-veterinary, and teacher education programs, see pages 12-15.

Curriculum Requirements

In order to earn a degree in the College of Arts and Sciences, the student must meet requirements in three main areas:

1) the major, 2) Basic Liberal Studies, and 3) electives. A description of these areas follows.

1. The Major. Every student is required to specialize in a particular area or discipline; this area of specialization is called the major. The requirements for each major vary from field to field, and are described on pages 34-53. Any student who has met the requirements for two separate majors within the Bachelor of Arts, the Bachelor of Science, or the Bachelor of Music degree programs in the College of Arts and Sciences has earned a double major and may have both fields listed on the transcript.

A student must maintain a 2.00 quality point average in his or her major to meet graduation requirements. One-half of the total number of credits needed in a given major must be earned at the University of Rhode Island.

Curricular Modifications. In consultation with the advisor, and with the approval of the department and dean, a student may be permitted to modify the normal requirements of the department in which the student is majoring. Students may modify any curricular requirement except course level, minimum quality point average, total credits, and the Basic Liberal Studies requirements. These may be modified only with approval of the Scholastic, Standing and Petitions Committee of the College of Arts and Sciences. Petition forms are available in the Office of the Dean.

2. Basic Liberal Studies. In the College of Arts and Sciences, General Education requirements are called Basic Liberal Studies, and are required of all students. This series of courses is intended to ensure that students have educational experiences that will help them to become informed and responsible participants in society and contribute to the full development of their individual capabilities. The Basic Liberal Studies program embodies the philosophy and fundamental knowledge that characterizes an arts and sciences education.

The following courses are approved by the College of Arts and Sciences to fulfill Basic Liberal Studies requirements.

Fine Arts and Literature

Fine Arts: ARH 120, 251, 252, 265, 284, 285, 359, 364, 374; ART 101, 103, 203, 207, 215, 231, 233; COM 231; HPR 101; LAR 201; MUS 101, 106, 111; THE 100, 181, 351, 352, 381, 382, 383.

Literature: AAF 247, 248; CLA 391, 395, 396, 397; CLS 160, 250, 335; ENG 160, 241, 242, 243, 247, 248, 251, 252, 260,

263, 264, 265, 280; FRN 327, 328, 391, 392, 393; GER 325, 326, 392; ITL 325, 326, 391, 392, 395; RUS 325, 326, 391, 392; SPA 305, 306, 307, 308, 325, 391, 392, 393.

Letters

AAF 150; APG 327; CLS 235; COM 200, 205, 210; HIS 111, 112, 113, 114, 115, 116, 118, 123, 125, 132, 141, 142, 143, 145, 150, 171, 176, 177, 180, 304, 305, 306, 307, 309, 310, 311, 315, 321, 323, 324, 327, 332, 333, 340, 341, 342, 346, 353, 354, 360, 372, 376, 377, 381, 382, 384, 398; HPR 104, 107, 203; JOR 110; LAR 202; LET 151, 351; NES 200; PHL 103, 204, 210, 212, 217, 235, 314, 318, 319, 321, 322, 323, 324, 325, 328, 331, 346, 355; PSC 240, 341, 342; PSY 310; RLS 111, 125, 126, 131; WMS 333.

Natural Sciences

APG 201; AST 108; AVS 101; BIO 101, 102; BOT 111; CHM 100, 101, 102, 103, 105, 112, 114, 124, 191, 192; FSN 207; GEL 100, 102, 103; HPR 103, 109; OCG 123; PHY 109, 110, 111, 112, 130, 140, 185, 186, 213, 214, 285, 286; ZOO 111, 286.

Social Sciences

APG 200, 202, 203, 220, 319; COM 220; ECN 100, 201, 202, 300, 361; EDC 102, 312; ENG 232, 330; FSN 150; GEG 100, 104; HDF 220; HPR 102, 110; LIN 200, 202, 220; NRS 100; PSC 113, 116, 201, 221, 288; PSY 103, 113, 232, 235, 254; REN 105; SOC 100, 102, 204, 206, 212, 214, 216, 224, 238, 240, 241, 242, 316, 330, 336; WMS 150.

Mathematics

CSC 201; HPR 108; MTH 107, 108, 111, 131, 132, 141, 142; QBA 101, 102; STA 220.

English Communication

Writing (Cw)—CMS 101; ENG 103; HPR 112; WRT 101, 103, 112, 122, 123, 201, 227, 301, 333. **General (C)**—CMS 101; COM 101 and 103; HPR 111; PHL 101.

Foreign Language and Culture

See the chart on page 34.

3. Electives. Electives are courses not included in the Basic Liberal Studies or major requirements which students may freely select to earn the total number of credits required for graduation. Many students use their elective credits to develop a minor field (see page 11).

Course Load. No student may take more than 19 credits per semester without permission from the advisor and the Dean.

Graduation. It is the responsibility of the student to be familiar with University and college requirements and to file for graduation with the Office of the Dean. Deadlines for submission are as follows:

May Graduation—November 1

August Graduation—April 1

December Graduation—August 1

Seniors completing their final course work off campus must file a Senior Off-Campus Study Form with the Office of the Dean and they should file for graduation before leaving campus.

Bachelor of Arts

The Bachelor of Arts curriculums provide a general cultural background and an opportunity to major in any one of 31 fields of study.

Curriculum Requirements. Each candidate for a Bachelor of Arts degree must

meet certain minimum curricular requirements in quantity and quality. These requirements include: at least 120 passed credits, which include at least 42 credits in courses numbered 300 or above, and an overall quality point average of at least 2.00.

At least half the credits in the major must be earned at the University of Rhode Island.

In addition to meeting the requirements of the Basic Liberal Studies program, each candidate must complete a major and a number of elective courses. The major totals 27–33 credits.

Basic Liberal Studies Requirements

Courses used to fulfill these requirements must be selected from the list approved by the College of Arts and Sciences. Basic Liberal Studies requirements are designed only for students in the College of Arts and Sciences, but they also fulfill the University's General Education requirements.

Students may use *only two courses per discipline* (as identified by the course code) to fulfill requirements in Fine Arts and Literature, Letters, Natural Sciences, and Social Sciences.

Courses in a student's major may not be used to fulfill requirements in Fine Arts and Literature, Letters, Natural Sciences, and Social Sciences. Students completing a double major, however, may use courses from one major to fulfill these requirements.

Basic Liberal Studies Requirements

BACHELOR OF ARTS

BACHELOR OF SCIENCE BACHELOR OF FINE ARTS BACHELOR OF MUSIC

Fine Arts and Literature	9 credits (at least 3 in Fine Arts; at least 3 in Literature)	6 credits (3 in Fine Arts; 3 in Literature)
Letters	9 credits	6 credits
Social Sciences	9 credits	6 credits
Natural Sciences	9 credits	6 credits
Mathematics	3 credits	3 credit
Communication Skills	6 credits (3 must be in a writing course; the other 3 may be in another writing course or may be selected from the general communication courses)	6 credits (3 must be in a writing course; the other 3 may be in another writing course or may be selected from the general communication courses)
Foreign Language and Culture	<i>Choose one of the following options:</i> • Course work through the intermediate level (104 for modern languages; 302 for classical languages) • Demonstration of competence through the intermediate level by examination • Study abroad in an approved academic program for one semester	<i>Choose one of the following options:</i> • Two-course sequence in a language studied for two or more years in high school through at least the 103 level in a modern language or 301 in a classical language • Demonstration of competence through the intermediate level by examination or by successful completion of 104 in a modern language or 302 in a classical language • Course work in a language not previously studied (or studied for less than two years in high school) through the beginning level (102) • Study abroad in an approved academic program • Two courses selected from <i>within a single culture cluster</i> taken, if possible, in the same or consecutive semesters. See page 10 for a list of approved culture clusters.

B.A. Major. The major is the discipline or subject area in which the degree is granted. It may include not only required courses within the major department but also courses in related subjects. The student should declare this major before the end of the fourth semester.

The major comprises no fewer than 27 nor more than 33 credits. These, however, are exclusive of any credits that are outside the major department but may be required by that department as prerequisites. Including such prerequisites, the major may not exceed 36 credits.

The student may earn up to 45 credits in course work offered by the major department as identified by the course code, counting as electives those credits earned in excess of the major requirements. Any credits in excess of 45 earned in the major department increase correspondingly the minimum number of credits required for graduation.

At least half of the credits in the major must be earned at the University of Rhode Island.

Majors include: anthropology, art (history and studio), biology, chemistry, classical studies, communication studies, comparative literature studies, economics, English, French, geology, German, history, Italian, journalism, Latin American studies, linguistics, marine affairs, mathematics, music, philosophy, physics, political science, psychology, Russian, sociology, Spanish, theatre, urban affairs (urban social processes, policy formation, and spatial development), and women's studies.

Bachelor of Science

The Bachelor of Science curriculums are professionally oriented and, in general, meet the accreditation standards of national professional associations.

Curriculum Requirements. All candidates for the Bachelor of Science degree must fulfill the requirements of the Basic Liberal Studies program and complete a major of 30–45¹ credits within a department or program. In addition, a department may require for its major certain courses in other departments, with the stipulation that this will not preclude their application to the Basic Liberal Studies program requirements. No more than 130 credits can be required in a program.

At least half the credits in the major must be earned at the University of Rhode Island.

Each major within the B.S. curriculum has certain more specific requirements, as listed on the following pages.

Majors include: applied quantitative economics, applied sociology, botany, chemistry, chemistry and chemical oceanography, clinical laboratory science, computer science, geology, geology and geological oceanography, mathematics, microbiology, physics, physics and physical oceanography, statistical science, and zoology.

Bachelor of Fine Arts

The curriculums provide the opportunity to discover and develop creative capacities in the fine arts. The emphasis is on richness of program and quality of experience rather than the development of isolated skills. Applicants registering for work toward the Bachelor of Fine Arts degree must receive permission of their major department by arranging for an interview with a departmental representative. Further details and appointments may be obtained through the Undergraduate Admissions Office.

Curriculum Requirements. All candidates for the Bachelor of Fine Arts degree are required to meet the requirements of the Basic Liberal Studies program.

At least half the credits in the major must be earned at the University of Rhode Island.

Majors include: art and theatre.

Bachelor of Music

The Bachelor of Music degree is designed to prepare qualified students for careers in the field of music. Students may select one of the seven majors depending on their aims and abilities. See page 74 for admission requirements for teacher education programs.

Curriculum Requirements. All candidates for the Bachelor of Music degree are required to meet the requirements of the Basic Liberal Studies program.

At least half the credits in the major must be earned at the University of Rhode Island.

Students are encouraged to attend department-sponsored events each semester.

Majors include: classical guitar, voice, piano or organ, orchestral instrument, music history and literature, theory and composition, and music education.

All areas provide for a good background in academic subjects, and each curriculum contains basic courses for the development of sound musicianship. An audition conducted by members of the Music Department staff is required for permission to register for work toward the Bachelor of Music degree.

The music education curriculum includes courses in educational psychology, methods, and a teaching internship that leads to state certification for teachers.

The total number of credits for graduation is 125 (126 for music education majors).

African and Afro-American Studies Program

Director: Associate Professor Hamilton

The African and Afro-American studies program is an interdisciplinary program that offers a minor to undergraduate students. Its objective is to broaden students' intellectual and global experiences through the study of Africa and African diaspora. See page 11 for a description of the requirements for this minor.

Anthropology

The Department of Sociology and Anthropology offers the degree of Bachelor of Arts (B.A.) in anthropology.

Faculty: Professor Poggie, *chairperson*. Professors Loy, Pollnac, and Turnbaugh; Associate Professor Handsman; Assistant Professors Johnston, LaVelle, and Lynch.

Students desiring to major in anthropology must complete a total of 30 credits (maximum 45 credits) in that subject. This total must include at least one course (three credits) from each of the five subdisciplines of anthropology, as follows: *Cultural Anthropology* includes APG 203, 309, 322, 326, 405, and 413; *Culture Areas* includes APG 311, 313, 315, 319, and 325; *Physical Anthropology* includes APG 201, 300, 327, 350, 390, 400, and 412; *Archaeology* includes APG 202, 303, 310L, and 317; *Anthropological Linguistics* includes APG 200 and 220.

¹The student majoring in chemistry, for ACS accreditation purposes, will be allowed 48 credits.

In addition, each student majoring in anthropology must complete APG 401 and one of the following methodology courses: APG 300 if taken with the laboratory (APG 310J), 302, 317, 350, or 412. The remaining nine credits can be selected from course offerings in anthropology.

It is recommended that the first course in each subdiscipline be at the 200 level. These 200-level courses are prerequisites for upper-division courses in the subdisciplines, although prerequisites may be waived by the instructor.

It is strongly recommended, but not required, that anthropology majors take at least one course in inferential statistics (e.g., STA 308 or 409).

A total of 120 credits is required for graduation. At least 42 of these must be in courses numbered 300 or above.

Art

The Department of Art offers a Bachelor of Arts (B.A.) degree with a major in either art history or art studio, and a Bachelor of Fine Arts (B.F.A.) degree in studio.

Faculty: Professor Holmes, *chairperson*. Professors Calabro, Klenk, Leete, Onorato, Parker, Richman, Rohm, and Roworth; Associate Professor Pagh; Assistant Professor Hollinshead.

BACHELOR OF ARTS

Art History. It is recommended that students intending to major in art history plan to complete a minimum of six credits in the history of art by the end of the sophomore year. For graduation, students must complete 30 credits (maximum 45 credits) in art history, including ARH 251 and 252 (6). At least 12 credits must be taken from ARH 354, 356, 359, 363, 365. An additional six credits must be taken from the preceding group or one or more of the following: ARH 284, 285, 364, 374, 375. An additional six credits must be taken at the 400 level. At least three of these credits must be taken from ARH 461, 462, 480. It is recommended that students who expect to pursue graduate studies in art history take ARH 469 or 470.

It is recommended that students majoring in art history achieve intermediate-level proficiency in at least one foreign language. Students anticipating graduate study in art history may need proficiency in a second foreign language. Students are

also encouraged to enroll in courses in art studio, history, literature, music, and philosophy.

A total of 120 credits is required for graduation. Students must fulfill the requirements of the Basic Liberal Studies program and take 30–45 credits in art history. Students may use courses in art studio to satisfy Basic Liberal Studies requirements. Of the 120 credits required for graduation, 42 credits must be in courses numbered 300 or above.

Art Studio. It is recommended that students intending to major in art studio plan to complete a minimum of nine credits in studio by the end of the sophomore year. For graduation, a minimum of 30 credits in art (maximum 45 credits) must be completed, including: the studio courses ART 101, 103, and 207; the art history courses ARH 120, 251, 252; and one art history elective at the 200 level or above.

During the first semester of the sophomore year, all B.A. studio majors and B.F.A. candidates must participate in ART 002 Sophomore Review. To participate in the review, students must have a 2.30 grade point average in the foundation courses (ART 101, 103, 207 and ARH 120) and submit a one-page statement of purpose.

An additional six credits must be selected from one of the following sequences of studio courses: ART 213, 314; 215, 316; 221, 322; 231, 332; 233, 334; 243, 344. This sequence must be completed by the end of the junior year.

In the senior year, an additional six credits must be selected from 300- or 400-level studio courses (except 309 and 310).

It is recommended that art majors elect at least three credits in the allied fields of music or theatre.

A total of 120 credits is required for graduation. Students must fulfill the requirements of the Basic Liberal Studies program and take 21–36 credits in art studio and nine credits in art history. Students may use additional approved BLS courses in art history to satisfy Basic Liberal Studies requirements. Of the 120 credits required for graduation, 42 credits must be in courses numbered 300 or above.

BACHELOR OF FINE ARTS

It is recommended that students intending to enter the B.F.A. program in art plan to complete ARH 120 in the freshman year and to have completed an additional

three credits in art history and a minimum of 24 credits in studio by the end of the sophomore year.

Students in the B.F.A. program must complete a minimum of 72 credits in art. Studio courses required of all majors include: ART 101 (3), 103 (3), 207 (3), 208 (3), either 213 or 215 (3), 405 (3), and 406 (3).

An additional 12 credits must be selected from 200-level studio courses, and an additional 21 credits must be selected from 300-level studio courses.

During the first semester of the sophomore year, all B.A. majors and B.F.A. candidates must participate in ART 002 Sophomore Review. To participate in the review, students must have a 2.30 grade point average in the foundation courses (ART 101, 103, 207 and ARH 120) and submit a one-page statement of purpose.

ARH 120 is required of all students, and an additional nine credits must be selected in art history, three credits of which must be numbered 300 or above.

An additional six credits of art electives must be selected at the 300 level or above in either studio or art history.

A minimum of 120 credits is required for graduation, including the following: major requirements in studio (54), art history (12), and studio and/or art history electives (6). Students must meet the requirements of the Basic Liberal Studies program.

Biological Sciences

Programs in biological sciences are administered by the Departments of Botany; Biochemistry, Microbiology, and Molecular Genetics; and Zoology. A student may earn either the Bachelor of Arts (B.A.) degree in biology or the Bachelor of Science (B.S.) degree in botany, microbiology, or zoology. The Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees, also offered by these departments, are described in the *Graduate Bulletin*.

Botany Faculty: Professor Harlin, *acting chairperson*. Professors Goos, Hargraves, Killingbeck, Koske, Smayda, and E. Swift; Associate Professor Mottinger; Assistant Professors J.H. Norris and A. Roberts; Adjunct Professors Chomet and Kausch; Adjunct Associate Professors Hammen-Winn and Thursby; Adjunct Assistant Professors Gemma and E. Roberts; Professors Emeriti L. Albert, Beckman, Caroselli, Hauke, Lepper, and Palmatier.

Microbiology Faculty: Professor Laux, *chairperson*. Professors Cabelli, P. Cohen, Hartman, Hufnagel, Traxler, Tremblay, and N. Wood; Associate Professors Bradley, Goldsmith, Krul, Mottinger, Nelson, Rhoads, and Sperry; Assistant Professors Chandlee, Fischl, and J.H. Norris; Professor Emeritus Carpenter.

Zoology Faculty: Professor Bullock, *acting chairperson*. Professors Cobb, Costantino, Heppner, Hill, Hyland, Kass, Shoop, Specker, and Winn; Associate Professors Bibb, Goldsmith, Krueger, Mottinger, and Twombly; Research Assistant Professor Bengtson; Adjunct Professors D. Miller and Turner; Adjunct Associate Professors Ho and Sharma; Adjunct Assistant Professor Mather; Professors Emeriti Goertemiller, Hammen, Harrison, and Zinn; Associate Professor Emeritus Mathewson.

BACHELOR OF ARTS

Students selecting a major in biology must complete a minimum of 28 credits (maximum 45 credits) in biological sciences including the following basic courses: BIO 101 and 102 or BOT 111 and ZOO 111 (6-8), MIC 211 (4), and an additional six credits of BOT electives and six credits of ZOO electives.

The remaining four to six credits can be selected from courses in botany, microbiology, or zoology. Students in this major must elect a year of chemistry. Those wishing to prepare for a professional career in the life sciences should enroll in a B.S. program described below.

A total of 120 credits is required in the B.A. program. At least 42 credits must be in courses numbered 300 or above.

BACHELOR OF SCIENCE

This curriculum provides specialization in the fundamental principles of botany, microbiology, or zoology, and is concerned with the application of biological science to problems of modern life. It also provides preparation for graduate work in biological fields including aquatic, environmental, and marine biology, molecular, cellular, and developmental biology, biological oceanography, genetics, immunology, limnology, and physiology, and preparation for admission to professional schools of medicine, dentistry, and veterinary medicine.

Students who know their professional goals are encouraged to declare a major as soon as possible to take advantage of

skilled advising in botany, microbiology, or zoology. Students *must* declare their major when leaving University College.

Each concentration requires a total of 130 credits.

Freshman Year

First semester: 17-18 credits

Introductory biology requirement (see Botany, Microbiology, Zoology), CHM 101, 102 or 103, 105 (4), math requirement (3-4) (see Botany, Microbiology, Zoology), modern language or elective (3), and Basic Liberal Studies requirement or free elective (3).

Freshman Year

Second semester: 17-18 credits

Introductory biology requirement (see Botany, Microbiology, Zoology), CHM 112, 114 (4), math requirement (3-4) (see Botany, Microbiology, Zoology), modern language or elective (3), and Basic Liberal Studies requirement or free elective (3).

Sophomore Year

First semester: 16 credits

MIC 211 (4),² CHM 227 (3), and nine credits of Basic Liberal Studies requirements or free electives³ for a total of 16 credits.

Sophomore Year

Second semester: 17-18 credits

Curriculum requirement (3-4), Basic Liberal Studies requirements or free electives (9), and the remaining chemistry requirements CHM 226,⁴ 228 (5).

Botany. A minimum of 30 credits in botany is required and must include BOT 111, 262, 321, 352, and 445. The remaining 14 credits will be selected to complete a particular subdisciplinary path. In addition, the student must take MIC 211; CHM 101, 102 or 103, 105, 112, 114, 226,⁴ 227, 228 or 124, 126 and BCP 311; PHY 213, 285, 214, 286 or 111 and 112, 185 and 186; ZOO 111; WRT 101; COM 101; MTH 131; CSC 201 or MTH 132. A modern language is recommended.

Students are strongly urged to consult faculty advisors to obtain guidance on the various subdisciplinary paths available.

Microbiology. A minimum of 30 credits in microbiology is required, including MIC 333, 413, 414, 415, 416, and 495 or 496, and one course selected from MIC 412, 422, 432, or 576. The student majoring in microbiology may include any course in

microbiology; BOT 432, 465, 534, 542; PCG 536; ZOO 327, 331, 341, 437, and 512. A student who plans to attend graduate school is advised to take MTH 131 and 132 or 141 and 142, and BCP 435. In addition, the student must take BOT 111 and 352; ZOO 111; CHM 101, 102, or 103, 105, 112, 114, 212, 226,⁴ 227, and 228; BCP 311; PHY 213, 214, 285, and 286 or 111, 112, 185, and 186; and MTH 131 or 141 and one semester from the following: MTH 111, 132, 142; CSC 201 or STA 407.

Zoology. A minimum of 30 credits in zoology is required and must include ZOO 101, 102, 104, 201, 202, and 203. A maximum of six credits in ZOO 391, 392, 491, and 492 may be used toward the required 30 credits. In addition, the student must take BOT 111; CHM 101, 102, 112, 114, 226,⁴ 227, 228 or 124, 126, and BCP 311; MTH 131, 132 or 141, 142; PHY 111, 112, 185, and 186 or PHY 213, 214, 285, 286; and a modern language through the intermediate level. **Study abroad does not satisfy the departmental language requirement.** ZOO 111 is not required for a major in zoology but may be applied toward the 30 credits required. Students are encouraged to become involved in the department's varied research activities by arranging to register for assigned work or guided research.

Students are strongly urged to consult the zoology advisors and obtain from them detailed programs of the various subdisciplinary paths through the department most suited to their particular career goals.

Chemistry

The Department of Chemistry offers a Bachelor of Arts (B.A.) degree and a Bachelor of Science (B.S.) degree. The Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees in chemistry are described in the *Graduate Bulletin*.

Faculty: Professor W. Nelson, *chairperson*. Professors C. Brown, P. Brown, Cheer, Dain, Euler, Fasching, Fisher, Freeman, Kirschenbaum, W. Rosen, Vittimberga, and S. Yang; Associate Professor K. Peterson; Assistant Professor Zoski.

² Not required of zoology majors.

³ Botany and zoology majors are strongly advised to begin taking required major courses at this time.

⁴ CHM 229, 230, which is offered in summer only, may be substituted for CHM 226.

BACHELOR OF ARTS

Students selecting this field must complete a minimum of 29 credits (maximum 45 credits) in chemistry by taking either 10 credits as CHM 191, 192; or 12 credits as CHM 101, 102, 112, 114, and 212; and 16 credits as CHM 291, 292, 335, 431, and 432. One additional course must be chosen from CHM 401, 412, or 427. CHM 226, 227, 228 may be substituted for the 291, 292 sequence.

MTH 141 and 142 and one year of physics (PHY 213, 214, 285, and 286, or PHY 111, 112, 185, and 186)⁵ are required.

A total of 120 credits is required for the B.A. degree. At least 42 of these must be in courses numbered 300 or above.

BACHELOR OF SCIENCE

Designed to prepare the student for a career in chemistry, this curriculum provides a thorough training in both theory and practice in the fields of analytical, biophysical, organic, and inorganic chemistry. Those who complete this curriculum are prepared to continue with graduate study leading to an advanced degree, to teach, or to enter specialized fields in development, control, technical sales, and research either in the chemical industry or in industries involving chemical processes.

The curriculum has been approved by the American Chemical Society Committee on the Professional Training of Chemists. Graduates receive a certification card issued by the society and are eligible for senior membership after two years of experience in the field of chemistry. It is strongly recommended that WRT 101 or 201 be taken in the freshman year. CHM 425, 427 should be taken in the junior year by students planning research or advanced course work in organic chemistry.

Bachelor of Science students desiring the American Chemical Society option in chemistry/biochemistry must take BCP 481, 482 or BCP 581, 582. Six additional credits in undergraduate research (either CHM 353 and/or 354) are also required to satisfy requirements for advanced laboratory. CHM 353, 354 will be supervised by faculty with expertise in biochemistry. Students electing the chemistry/biochemistry option may wish to take additional courses in molecular biology as electives.

A total of 130 credits is required for the B.S. degree.

The B.A. and B.S. programs can easily be adapted for transfer students and for premedical and preveterinary programs.

Freshman Year

First semester: 17 credits

CHM 191 (5),⁶ MTH 141 (4), language⁷ or free elective (3), Basic Liberal Studies requirements (5).

Freshman Year

Second semester: 17 credits

CHM 192 (5),⁶ MTH 142 (4), language⁷ or free elective (3), Basic Liberal Studies requirements (5).

Sophomore Year

First semester: 17 credits

CHM 291 (4), MTH 243 (3), PHY 213 (3) and 285 (1),⁵ language⁷ or Basic Liberal Studies requirements (6).

Sophomore Year

Second semester: 17 credits

CHM 292 (4), MTH 244 (3), PHY 214 (3) and 286 (1),⁵ language⁷ or Basic Liberal Studies requirements (6).

Junior Year⁸

First semester: 14 credits

CHM 431 (3), 335 (2), physics elective (3), Basic Liberal Studies requirement (3), free elective (3).

Junior Year

Second semester: 17 credits

CHM 432 (3), 412 (3), 414 (2), Basic Liberal Studies requirements (6), free elective (3).

Senior Year

First semester: 16 credits

CHM 401 (3), 425 (2), 427 (3), curriculum⁹ requirements (3–5), free electives (3–5).

Senior Year

Second semester: 15 credits

CHM 492 (1), 402 (2), curriculum⁹ requirement (0–3), free electives (8–11).

Chemistry and Chemical Oceanography

The Department of Chemistry and the Graduate School of Oceanography offer a Bachelor of Science (B.S.) degree in chemistry and chemical oceanography.

Coordinator: Professor Fasching (Chemistry).

The faculty consists of the members of the Department of Chemistry and the chemical oceanography faculty of the Graduate School of Oceanography.

The program is designed to prepare the student for a career either in chemistry or in chemical oceanography. This curriculum provides a thorough training in both theory and practice in the fields of analytical, physical, organic, inorganic, and oceanographic chemistry. Those who complete this curriculum are prepared to continue with graduate study leading to an advanced degree in chemistry or in chemical oceanography, to teach, or to enter specialized fields in development, control, technical sales, and research in the chemical or oceanographic industries.

The curriculum has been approved by the American Chemical Society Committee on the Professional Training of Chemists. Graduates receive a certification card issued by the society and are eligible for senior membership after two years of experience in the field of chemistry. It is strongly recommended that WRT 101 or WRT 201 be taken in the freshman year.

A total of 130 credits is required for graduation.

Freshman Year

First semester: 17 credits

CHM 191 (5),⁶ MTH 141 (4), language⁷ or free elective (3), Basic Liberal Studies requirements (5).

Freshman Year

Second semester: 17 credits

CHM 192 (5),⁶ MTH 142 (4), language⁷ or free elective (3), Basic Liberal Studies requirements (5).

Sophomore Year

First semester: 17 credits

CHM 291 (4), MTH 243 (3), PHY 213 (3) and 285 (1),⁵ language⁷ or Basic Liberal Studies requirements (6).

Sophomore Year

Second semester: 17 credits

CHM 292 (4), MTH 244 (3), PHY 214 (3) and 286 (1),⁵ language⁷ or Basic Liberal Studies requirements (6).

Junior Year

First semester: 14 credits

CHM 431 (3), 335 (2), OCG 401 (3), Basic Liberal Studies requirement (3), free elective (3).

Junior Year*Second semester: 15 credits*

CHM 432 (3), OCG 494 (3), Basic Liberal Studies requirements (6), free elective (3).

Senior Year*First semester: 16 credits*

CHM 401 (3), 425 (2), 427 (3), OCG 493 (3), free electives (5).

Senior Year*Second semester: 17 credits*

CHM 412 (3), 414 (2), OCG 521 (3), free electives (9).

Classical Studies

The Department of Modern and Classical Languages and Literatures offers the Bachelor of Arts (B.A.) degree with a concentration in classical studies.

Faculty: Associate Professor Suter, *section head.*

Students selecting classical studies as a major complete a minimum of 30 credits: a) 18 credits from either LAT 301, 302, 497, 498, or GRK 301, 302, 497, 498; b) six credits from the other language at any level; c) six additional credits from the following: ARH 354; CLA 391, 395, 396, 397; HIS 300, 303; PHL 321. Either the LAT 101, 102 or the GRK 101, 102 sequence may count toward the major; the other 100-level sequence, not counting toward the major, will serve as a prerequisite for advanced courses.

Certification in secondary education in Latin is available through the Department of Education.

A total of 120 credits is required for graduation. At least 42 of these must be in courses numbered 300 or above.

Clinical Laboratory Science

The clinical laboratory science curriculum is administered by the Department of Biochemistry, Microbiology, and Molecular Genetics and offers a Bachelor of Science (B.S.) degree in clinical laboratory science. The Master of Science (M.S.) degree in clinical laboratory science is described in the *Graduate Bulletin*.

Faculty: Professor Laux, *chairperson*; Paquette, *coordinator*. Clinical Assistant Professors Heelan and Lewandowski;

Adjunct Clinical Professors Allegra and Kenney; Adjunct Clinical Associate Professors Kessiman and Schwartz; Adjunct Clinical Assistant Professors Campbell, Gmuier, Howard, and Mello.

Clinical laboratory science is the health profession concerned with the diagnosis, treatment, and prevention of disease using biological, chemical, and physical methods in the clinical laboratory. During the first three years, the emphasis is on Basic Liberal Studies requirements and on the basic courses in biology, chemistry, mathematics, and physics needed for background in the applied sciences. The courses of the senior year are taught off campus by the staff members of affiliated hospital schools of medical technology. These schools are accredited by the National Accreditation Agency in Clinical Laboratory Science. The senior year is a 12-month program of study and starts in late July, soon after the completion of the third year of the curriculum. It is taken at one of the following hospitals, which are about 30 miles from the main campus of the University: Rhode Island Hospital and St. Joseph Hospital in Providence; the Memorial Hospital of Rhode Island in Pawtucket; or the Rhode Island Medical Center in Cranston. The clinical program includes lecture and laboratory instruction in the various areas of clinical laboratory science—clinical chemistry, clinical microbiology, hematology, immunology, and immunohematology—and prepares the student for the national certification examinations.

Applicants to this curriculum should have completed 60 credits by June of the sophomore year and should have taken most of the courses listed below during the first two years. Students are selected by the University Committee on Clinical Laboratory Science and by program officials of the hospital schools. Since the number of students admitted to this professional curriculum is limited, interested students should consult early in their college career with the coordinator so that they will be familiar with the requirements and application procedures. Flexibility in the curriculum permits the student who is not accepted to fulfill requirements for the Bachelor of Science degree in another concentration such as microbiology, zoology, or certain related health sciences.

Students with a degree in health or a science discipline may also apply to the clinical internship as a fifth year of study.

A total of 130 credits is required for graduation.

Freshman Year*First semester: 15–16 credits*

CHM 101, 102 or 103, 105 (5); BOT 111 or ZOO 111 (4); MTC 102 (1); MTH 111 or 131 (3) or 141 (4); and one Basic Liberal Studies requirement (3).

Freshman Year*Second semester: 14 credits*

CHM 112, 114 (4), ZOO 111 or BOT 111 (4), CSC 101 or 201 (3), and one Basic Liberal Studies requirement (3).

Sophomore Year*First semester: 17 credits*

CHM 227 (3), PHY 111, 185 (4), MIC 211 (4), and Basic Liberal Studies requirements (6).

Sophomore Year*Second semester: 17 credits*

CHM 226, 228 (5), MTC 202 (3), ZOO 242 (3), and Basic Liberal Studies requirements (6).

Junior Year*First semester: 18 credits*

MIC 333 (3), MTC 483 (3), EDC 102 or 312 (3), and Basic Liberal Studies requirements (9).

Junior Year*Second semester: 17 credits*

MIC 432 (3), BCP 311 (3), STA 308 or 407 (3), MGT 300 or 301 (3), and electives (5).

Senior Year*First semester: 16 credits*

MTC 401 (8), 403 (4), 405 (2), and 407 (2).

⁵ PHY 203, 204, 205, 273, 274, and 275 may be substituted for PHY 213, 214, 285, 286, but will not satisfy Basic Liberal Studies requirements.

⁶ Students can take CHM 101, 102, 112, 114, and 212 instead of 191, 192.

⁷ Students planning to attend graduate school should take Russian or German through the intermediate level.

⁸ See comments above concerning CHM 425, 427.

⁹ CHM 353, 354, or, with permission of department, any 500-level chemistry course.

Senior Year

Second semester: 16 credits

MTC 402 (8), 404 (6), and 406 (2).

Communication Studies

The Department of Communication Studies offers the Bachelor of Arts (B.A.) degree in communication studies.

Faculty: Associate Professor S. Wood, *chairperson*. Professors Anderson, Bailey, Brownell, Devlin, Doody, and Schultz; Associate Professors Ketrow and Mundorf; Assistant Professors G. Chen and Quainoo.

The program in communication studies provides maximum flexibility in planning for a variety of academic and occupational goals. The curriculum is personalized for each student. Although the student will play an important role in curriculum planning, his or her program is closely supervised by the advisor. Specific curricular, extracurricular, and internship programs are planned as integral parts of each student's program. Departmentally approved courses provide the student diversity or a more focused approach, depending on the student's needs and goals. Courses outside the department that relate to the student's needs and goals are also encouraged.

Courses in communication studies also can count as an option area in the B.S. degree program in the College of Human Science and Services. Other courses can count toward a minor in public relations when taken in conjunction with specific journalism and marketing courses.

Students selecting this major may pursue studies in business and professional communication, communication theory, oral interpretation, rhetoric and public address, or public relations.

The program requires a minimum of 36 credits (maximum 45 credits) in the major, including COM 101, 103, 206, and 306. The remaining 24 credits will be distributed as follows: at least two courses at the 200 level (excluding 216); three courses at the 300 level; and three courses at the 400 level (excluding COM 471-472, 491-492). The student and an advisor will design an appropriate selection of courses.

A total of 120 credits is required for graduation. At least 42 of these must be in courses numbered 300 or above.

Comparative Literature Studies

The Department of English and the Department of Modern and Classical Languages and Literatures offer jointly the Bachelor of Arts (B.A.) degree in comparative literature. The Master of Arts (M.A.) degree is described in the *Graduate Bulletin*.

Coordinator: Professor Leo (English).

The choice of courses in a student's major and in the area of special interest must have both sufficient range (genre, period, and at least two literatures) and a specific focus. It must be approved by an advisor and the Comparative Literature Advisory Committee consisting of members from the Department of English and the Department of Modern and Classical Languages and Literatures. It must also be filed with the Office of the Dean.

Students in the comparative literature studies program fulfill the Basic Liberal Studies Fine Arts and Literature requirement by taking six credits in Fine Arts and three credits in Literature which are over and above their major literature requirements.

Students must complete a minimum of 30 credits in one of the three major options:

English and One Foreign Literature in the Original Language: nine credits in English and/or American literature, 300 level or above; nine credits in one foreign literature; three credits in literary theory or criticism (CLS 350). The remaining credits are to be taken from the comparative literature core courses or the literature courses in the Department of English or the Department of Modern and Classical Languages and Literatures.

Two Foreign Literatures in the Original Language: nine credits in each of two foreign literatures; three credits in literary theory or criticism (CLS 350). The remaining courses are to be taken from the comparative literature core courses or the literature courses in the Department of English or the Department of Modern and Classical Languages and Literatures.

World Literature in English Translation: three credits in the nature of language from APG/LIN 200; APG/LIN 220; three credits in literary theory or criticism (CLS 350). The remaining credits are to be taken from the comparative literature core courses and the literature courses in the

Department of English, and the literature in English translation courses offered by the Department of English and the Department of Modern and Classical Languages and Literatures. In addition, a student choosing this option must have proficiency in a foreign language through the intermediate level.

A total of 120 credits is required for graduation. At least 42 of these must be in courses numbered 300 or above.

Computer Science

The Department of Computer Science and Statistics offers the Bachelor of Science (B.S.) degree in computer science. The Master of Science (M.S.) program in computer science and the Doctor of Philosophy (Ph.D.) in applied mathematical sciences with a specialization in computer science are described in the *Graduate Bulletin*.

Faculty: Professor Lamagna, *chairperson*. Professor Carney; Associate Professors Baudet, Carrano, J. Kowalski, and Ravikumar; Assistant Professors Peckham and Wolfe; Adjunct Associate Professors Arnold and Strauss; Adjunct Assistant Professors Ravenscroft and Rubin.

The curriculum is designed to provide a broad introduction to computer science fundamentals including software and systems, programming languages, machine architecture, and theoretical foundations of computing. The required mathematics preparation provides a basis for advanced work. Students will be well prepared for graduate study in computer science or computer-related areas.

Students in the computer science curriculum must complete a minimum of 41 credits as follows: CSC 211 (4), 212 (4), 301 (3), 311 (3), 331 (3), 340 (3), 411 (3), 412 (3); 15 additional credits chosen from CSC 312 (3), 320 (3), 402 (3), 406 (3), 420 (3), 436 (3), 440 (3), 445 (3), 450 (3), 481 (3), ELE 405 (3), including at least three credits from among CSC 440, 445, 450.

The student will also complete one COM course (3); MTH 141 (4), 142 (4), 215 (3), 243 (3); PHY 213, 285 (4), 214, 286 (4), or PHY 203, 273 (4), 204, 274 (4); one WRT course (3); and one course from among the following: MTH 316 (3), 322 (3), 382 (3), MTH/CSC 447 (3), PHL 451 (3).

In addition, one of the following two-course sequences in applied mathematics

is required: IME 411, 412; IME 432, 433; MTH 451, 452; MTH 451, 456; MTH 471, 472; STA 409, 412; STA 409, 413.

Students majoring in computer science who leave the University and are subsequently readmitted must follow the computer science curriculum requirements in effect at the time of their readmission, unless an exception is granted by the department and approved by the Dean.

A total of 126 credits is required for graduation. A possible course of studies follows.

First Year

First semester: 16 credits

MTH 141 (4), WRT 101 (3), Basic Liberal Studies requirements or electives (9).

First Year

Second semester: 17 credits

COM 101 (3), CSC 211 (4), MTH 142 (4), Basic Liberal Studies requirements or electives (6).

Second Year

First semester: 16 credits

CSC 212 (4), MTH 243 (3), Basic Liberal Studies requirements or electives (9).

Second Year

Second semester: 15 credits

CSC 301 (3), 340 (3), MTH 215 (3), Basic Liberal Studies requirements or electives (6).

Third Year

First semester: 16 credits

CSC 331 (3), PHY 213, 285 (4), math elective (3), Basic Liberal Studies requirements or electives (6).

Third Year

Second semester: 16 credits

CSC 311 (3), computer science elective (3), PHY 214, 286 (4), Basic Liberal Studies requirements or electives (6).

Fourth Year

First semester: 15 credits

CSC 411 (3), computer science electives (6), applied math elective (3), Basic Liberal Studies requirement or elective (3).

Fourth Year

Second semester: 15 credits

CSC 412 (3), computer science elective (3), applied math elective (3), Basic Liberal Studies requirements or electives (6).

Economics

The Department of Economics offers a Bachelor of Arts (B.A.) degree in economics and a Bachelor of Science (B.S.) degree in applied quantitative economics.

Faculty: Professor H. Barnett, *chairperson*.

Professors Burkett, Ramsay, Ramstad, and Starkey; Associate Professors Lardaro, McIntyre, Mead, C. Miller, Sharif, and Suzawa; Assistant Professor Latos.

BACHELOR OF ARTS

Students selecting this field must complete a minimum of 33 credits (maximum 45 credits) in economics, including ECN 201 and 202 (6), 361 (3), 327, 328 (6), 445 (3), and at least one quantitative course selected from 374 (3), 375 (3), 376 (4).

In addition, at least 12 credits must be completed from economics courses numbered 300 or above. Students may substitute up to six credits from other departments; three credits from statistics—QBA 201 (3), 202 (3), STA 308 (3), 409 (3), or 412 (3)—and three credits from another related course approved by the department chairperson. These substitutions must be filed with the Office of the Dean.

Students planning to do graduate work in economics are encouraged to take ECN 375, 376 and at least one semester of statistics.

A total of 120 credits is required for graduation. At least 42 of these must be in courses numbered 300 or above.

BACHELOR OF SCIENCE IN APPLIED QUANTITATIVE ECONOMICS

Students selecting this field must complete a minimum of 30 credits in economics, including ECN 201 and 202 (6), 323 and 324 (6), 361 (3), 376 (4), and at least three credits selected from 400- and 500-level courses. They will also be required to take the senior seminar, ECN 444 (3).

Students must also complete the following courses outside the department: COM 101; MTH 131 (141), and ECN 375 or both MTH 132 (142) and 215. In addition, students in this curriculum must complete one of the following statistics courses: MTH 451, STA 308, 409, or QBA 202 with a grade of B or better; CSC 201 (3); COM 101 (3); and WRT 333 (3).

A total of 120 credits is required for graduation.

English

The Department of English offers a Bachelor of Arts (B.A.) degree. The Master of Arts (M.A.) and Doctor of Philosophy (Ph.D.) programs in English are described in the *Graduate Bulletin*.

The Department of English offers jointly with the Department of Modern and Classical Languages and Literatures the Bachelor of Arts degree in comparative literature studies (see page 40).

Faculty: Associate Professor Reaves, *chairperson*. Professors Arakelian, Barber, J. Campbell, Cuddy, Donnelly, Dvorak, Kunz, Leo, MacLaine, Mathews, Neuse, Pearlman, Schwegler, Seigel, K. Stein, and Tutt; Associate Professors Burke, Cane, Hills, Jacobs, C. Martin, McCabe, Okeke-Ezigbo, Schoonover, Shammoun, and Swan; Assistant Professors Capello, Gititi, Mensel, Reynolds, Shugar, and Vaughn; Adjunct Professor Strommer.

Students selecting this field must complete a minimum of 30 credits (maximum 45 credits), including ENG 241, 251, and 252. Of the remaining 21 credits, three credits must be selected from each of the following groups: *Literature or Language Theory* (232, 310, 330, 336, 337, 350); *Genre* (243, 263, 264, 265, 362, 364, 366, 367, 446, 447, 448, 458, 468, 469, 477); *Major Figure* (280, 380, 384, 472, 485, 486); *Historical Period* (242, 270, 340, 347, 348, 349, 370, 371, 372, 374, 376, 377, 379); three credits selected from *Parallel Studies* (205, 247, 248, 260, 300, 305, 335, 346, 360, 385, 445, 474; WRT 301, 333); and six credits from any ENG course. At least 18 credits in ENG courses must be taken at the 300 level or above.

A total of 120 credits is required for graduation. At least 42 of these must be in courses numbered 300 or above.

French

The Department of Modern and Classical Languages and Literatures offers the Bachelor of Arts (B.A.) degree with a concentration in French. The Master of Arts (M.A.) program in French is described in the *Graduate Bulletin*.

Faculty: Associate Professor Morello, *section head*. Professors Chartier, K. Rogers, and Rothschild; Associate Professors Hammadou, Kuhn, and Toloudis.

Students selecting this field are required to complete at least 30 credits (maximum 45 credits) in French, not including FRN 101, 102, 131, 391, 392, 393, or 394. They may elect either a language-civilization option requiring six credits in civilization and a minimum of six credits in literature, or a language-literature option with a minimum of nine credits in literature. Courses in literature may be selected from among FRN 327, 328, courses at the 400 level, and, with permission of the instructor, courses at the 500 level.

Additionally, students with proven competence in French language and literature, with permission of the advisor, the section head, the department chairperson, and the Dean of the College of Arts and Sciences, may take courses toward their concentration in related fields such as history, linguistics, art, or philosophy.

Students in secondary education with an academic sequence in French (see pages 74-75) must take 36 credits and cannot count FRN 101, 102, 131, 391, 392, 393, 394, or any course in linguistics other than 220, which may be taken if approved by the French Studies Section.

Approval must be filed with the Office of the Dean.

A total of 120 credits is required for graduation. At least 42 of these must be in courses numbered 300 or above.

Geography

See Marine Affairs on page 45.

Geology

The Department of Geology offers a Bachelor of Arts (B.A.) degree and a Bachelor of Science (B.S.) degree in geology and a Bachelor of Science (B.S.) degree in geology and geological oceanography. The Master of Science (M.S.) degree in geology is described in the *Graduate Bulletin*.

Faculty: Professor Hermes, *chairperson*. Professors J. Boothroyd and Cain; Associate Professors Fastovsky, Frohlich, and Murray; Assistant Professor Veeger.

BACHELOR OF ARTS

Students selecting this field must complete a minimum of 30 credits (maximum 45 credits) in geology, including GEL 103 (4) and 488 (3).

The B.A. curriculum provides more flexibility than the B.S. curriculum in the choice of courses and offers the possibility of highly individualized programs in consultation with the faculty advisor. The B.A. curriculum can provide an appropriate background for geology-related fields dealing with natural resources, environmental studies, conservation, resource management, and others. Students intending to pursue graduate studies in the geosciences should consider the B.S. curriculum in geology or complement the B.A. curriculum with a broad background in basic sciences. The federal government identifies GEL 210, 240, 320, 321, 370, 450, and supporting sciences as a minimum background for geologists.

Students interested in teaching earth science should contact the Department of Geology for details about a cooperative program with the Department of Education.

A total of 120 credits is required in the B.A. program. At least 42 of these must be in courses numbered 300 or above.

BACHELOR OF SCIENCE

This curriculum is designed as a foundation for careers in the earth sciences. Students in the curriculum may elect one of the following options: general geology, environmental geology, geophysics, hydrogeology, petrology, or sedimentary geology. These options offer preparation for further work in areas such as environmental geology, mineral and energy resources, hydrology, sedimentology, coastal geology, paleontology, paleoecology, igneous and metamorphic petrology, geochemistry, structural geology, and tectonics.

All B.S. majors are required to complete the following geology courses: 103 (4), 320 (4), 321 (4), 370 (4), 450 (4), 488 (3), and an approved summer field camp (GEL 480) for a minimum of four credits. The field camp is normally undertaken following the junior year.

Students must also complete the following supporting course work: MTH 131 (3) or 141 (4); MTH 132 (3) or 142 (4); BIO 101 (3) or BOT 111 (4); BIO 102 (3) or ZOO 111 (4);¹⁰ CHM 101, 102 (4), and 112, 114 (4); CSC 201 or STA 308 (3); PHY 111, 185 (4) or 213, 285 (4); and PHY 112, 186 (4) or 214, 286 (4).

A total of 126 credits is required for graduation.

General Geology Option. Emphasizes a broad approach to earth science and incorporates introductory courses in each of the major earth science disciplines. This option includes all of the geology and supporting science courses recognized by the federal government as a minimum background for geologists. Students selecting this option are required to complete the following geology courses: GEL 210 (4), 240 (4), 421 (3), and 465 (3).

Environmental Geology Option. Emphasizes the study of geology as it pertains to the environment, including the recognition and reduction of effects of geologic hazards (coastal erosion, volcanic eruptions, earthquakes). Students selecting this option are required to complete the following geology courses: GEL 100 (3), 210 (4), and 301 (3). Students must also take two of the following: GEL 468 (3), 483 (3), 485 (3), 515 (3), 550 (3), 577 (3), NRS 410 (3), 423 (4), 424 (4), 461 (4), and CPL 434 (3).

Geophysics Option. Emphasizes applied geophysics, particularly the use of near-surface geophysical methods such as geoelectrics, gravity, and seismic refraction. Students selecting this option are required to complete the following geology courses: GEL 465 (3), 485 (3), and 487 (3). Students must also take two of the following: GEL 421 (3), 468 (3), 483 (3), 565 (3), and 570 (3).

Hydrogeology Option. Emphasizes the study of groundwater and its interaction with earth materials. This option includes all of the hydrology and supporting science courses recognized by the federal government as a minimum background for hydrologists. Students selecting this option are required to complete the following geology courses: GEL 210 (4), 468 (3), and 483 (3). Students must also take two of the following: GEL 421 (3), 485 (3), 515 (3), 550 (3), 568 (3), 583 (3), NRS 412 (3), 461 (4) or CVE 475 (3), NRS 514 (3), and CPL 434 (3).

¹⁰ Students electing the petrology, hydrogeology, or geophysics options may, with the chairperson's approval, take GEL 240 or an additional semester of mathematics, chemistry, or physics in lieu of a second semester of biological sciences. Completion of these courses fulfills the Natural Sciences and Mathematics requirements of the Basic Liberal Studies program.

Petrology Option. Emphasizes study of igneous and metamorphic processes through geochemistry, petrography, and structural analysis, leading to interpretations of rock petrogenesis and earth history. Students selecting this option are required to complete the following geology courses: GEL 421 (3), 530 or 531 (3). Students must also take two of the following: GEL 401 (3), 465 (3), 468 (3), 530 or 531 (3), 554 (3), 565 (3), 570 (3), 580 (3), and CHM 431 (3).

Sedimentary Geology Option. Emphasizes the study and interpretation of depositional environments, both in the present and in the geologic record, including the study of sedimentary processes, paleontology, the reconstruction of paleoenvironments, and stratigraphy. Students selecting this option are required to complete the following geology courses: GEL 210 (4), 240 (4), and 468 (3). Students must also take two of the following: GEL 422 (3), 465 (3), 515 (3), 550 (3), 554 (3), NRS 423 (4), and NRS 424 (4).

Geology and Geological Oceanography

The Department of Geology and the Graduate School of Oceanography offer a Bachelor of Science (B.S.) degree in geology and geological oceanography.

Coordinator: Professor Hermes (Geology). The faculty consists of the members of the Department of Geology and the marine geology and geophysics faculty of the Graduate School of Oceanography.

This demanding program includes a comprehensive background in geology and a solid introduction to geological oceanography. The curriculum includes the full set of chemistry, physics, biology, and mathematics courses required for a B.S. in geology. Students in the program will be advised jointly by geology and oceanography faculty members.

A senior research project will be taken in the Graduate School of Oceanography as OCG 493 or 494, under the direction of a GSO faculty member. Three core courses in oceanography—OCG 401, 541, and 542—will provide the student with a good overview of his or her intended field, and also relieve the student of two required courses if he or she continues on to study oceanography at the graduate level at the

University of Rhode Island. In addition to this, the student may find opportunities for summer employment or participation in oceanographic research cruises after his or her junior year.

Students completing this program of study will be well prepared to pursue either conventional geology career options or careers in geological oceanography. Technical positions in private or government oceanographic laboratories are available for geological oceanographers with bachelor's degrees. Students who pursue graduate studies can expect to find a high demand for geological oceanographers with advanced degrees. Students entering the URI Graduate School of Oceanography from this program will have a significant head start compared with those entering from most other undergraduate institutions.

The following core courses are required: GEL 103 (4), 210 (4), 240 (4), 320 (4), 321 (4), 370 (4), 422 (3), 450 (4), 465 (3), 480 (4), 488 (3); OCG 401 (3), 541 (4), 542 (4); and OCG 493 or 494 (3). Students must also complete the following supporting course work: MTH 131 (3) or 141 (4) and 132 (3) or 142 (4); CSC 201 (3) or STA 308 (3); BIO 101 (3) or BOT 111 (4); BIO 102 (3) or ZOO 111 (4); CHM 101, 102 (4) and 112, 114 (4); PHY 111, 185 (4) or 213, 285 (4); PHY 112, 186 (4) or 214, 286 (4).

A total of 126 credits is required for graduation.

German

The Department of Modern and Classical Languages and Literatures offers the Bachelor of Arts (B.A.) degree with a major in German.

Faculty: Professor Grandin, *section head*. Assistant Professors Hedderich and Kirchner; Lecturers Crossgrove, Einbeck, and von Reinhart.

Students selecting this major complete at least 30 credits (maximum 45 credits) in German, not including GER 101, 102, or 392. At least six credits must be taken at the 400 level in literature.

Students in secondary education (see pages 74–75) must take 36 credits in German.

Students in the International Engineering Program may use six credits of German literature toward the Fine Arts and Literature Basic Liberal Studies requirement.

A total of 120 credits is required for graduation. At least 42 of these must be in courses numbered 300 or above.

History

The Department of History offers a Bachelor of Arts (B.A.) degree. The Master of Arts (M.A.) program in history is described in the *Graduate Bulletin*.

Faculty: Professor Briggs, *chairperson*. Professors J.A. Cohen, Costigliola, Findlay, Gutchen, C.S. Kim, Klein, Strom, Thurston, and Weisbord; Associate Professor Honhart; Assistant Professors Daniel, Pegueros, and Schwartz; Adjunct Associate Professor Klyberg.

Students selecting this field must complete a minimum of 30 credits (maximum 45 credits) in history, including a minimum of six and a maximum of 12 credits in courses numbered 100 to 299.

The balance of required credits is in courses numbered 300 or above, including at least three courses numbered 400 or above, one of which must be an undergraduate seminar (HIS 495 or 496). Under unusual circumstances, with permission of the department chairperson, a student may substitute, in place of the seminar, HIS 391 leading to a substantial research paper.

Undergraduates wishing to take courses on the 500 level must secure the permission of the department.

A total of 120 credits is required for graduation. At least 42 of these must be in courses numbered 300 or above.

Italian

The Department of Modern and Classical Languages and Literatures offers the Bachelor of Arts (B.A.) degree with a major in Italian.

Faculty: Professor Trivelli, *section head*. Professor Viglionese; Associate Professor Sillanpoa.

Students selecting this field must complete at least 30 credits (maximum 45 credits), not including ITL 101, 102, 391, 392, 393, or 395. ITL 325, 326 are required for the major.

Students in secondary education (see pages 74–75) must take 36 credits.

A total of 120 credits is required for graduation. At least 42 of these must be in courses numbered 300 or above.

Journalism

The Department of Journalism offers the Bachelor of Arts (B.A.) degree.

Faculty: Professor Luebke, *chairperson*. Associate Professors Levin and Silvia; Assistant Professor deHoyos.

The Department of Journalism offers a course of study that is strongly grounded in the liberal arts. The department also requires that students explore the theoretical and practical aspects of contemporary American journalism. The focus is on reporting, writing, editing, and producing the news for print and broadcast. In addition, the department offers several public relations courses. Students can choose their journalism courses to give them depth in one medium or breadth across the media. The emphasis in all courses is on critical thinking and effective communication to a mass audience.

Students majoring in journalism must complete a minimum of 30 credits (maximum 45 credits) in journalism. All journalism majors must complete JOR 115, 220, 310, and 410. In addition, students must select nine credits from skills courses: JOR 230, 320, 321, 330, 331, 340, 341, 342, 420, 430, 441; and three credits from conceptual courses: JOR 210, 211, 311, 313, 415. Any journalism courses may be chosen for the remaining six credits. Students are encouraged to consult with their advisors about the mix of journalism courses that best meets their goals.

Journalism majors must fulfill some of their Basic Liberal Studies requirements by choosing from the following list of courses. The department has identified these courses as important preparation for students to both study and practice journalism.

*Fine Arts and Literature*¹¹: ARH 120 or MUS 101 or THE 100 and ENG 160 or 241 or 242 or 251 or 252 or 280.

*Letters*¹¹: HIS 142 or 341 or 354 and PSC 240 or 341 or 342 or PHL 103 or 204 or 217.

*Natural Sciences*¹¹: BIO 101 (or BOT 111) or BIO 102 (or ZOO 111) or CHM 101 and 102 or GEL 103 or PHY 111 and 185 or PHY 112 and 186.

*Social Sciences*¹¹: PSC 113 or 116 or 201 and SOC 102 or 240 or 242 or 336 or WMS 150.

*English Communication*¹¹: PHL 101.

The only journalism courses open to freshmen are JOR 110 (for nonmajors) and

JOR 115 (for majors). Journalism majors are urged to concentrate on their Basic Liberal Studies requirements during their freshman and sophomore years. In addition to the aforementioned required courses, other Basic Liberal Studies courses are recommended as useful for journalism majors. Students should consult with their advisors about complete Basic Liberal Studies requirements and about other courses that meet their individual goals.

Students must earn a grade of C or better in a "skills" course (including JOR 220) to enroll in the next-level course. Only three credits of JOR 220 may be used to satisfy graduation requirements.

The Department of Journalism, in conjunction with the Department of Communication Studies and the Department of Marketing, has developed a minor in public relations.

Students majoring in journalism are encouraged to pursue a minor.

A total of 120 credits is required for graduation. At least 42 of these must be in courses numbered 300 or above.

Languages

See Modern and Classical Languages and Literatures, page 46.

Latin American Studies

The Departments of Sociology and Anthropology, History, and Modern and Classical Languages and Literatures offer a Bachelor of Arts (B.A.) degree in Latin American studies.

Faculty: Associate Professor Morin, *LAS Committee chairperson*. *LAS Committee members:* Professors McNab and Poggie; Assistant Professors Gititi, Pegueros, and C. White.

Some faculty members in the College of Arts and Sciences who do not appear as members of the LAS Committee also offer courses acceptable in fulfilling the requirements leading to the B.A. in Latin American studies.

Students selecting this field must complete a minimum of 36 credits as follows: APG 315, HIS 381, 382, and one additional history course dealing with the major; six credits in Spanish or Portuguese from the approved list; LAS 397; PSC 201; ECN 363; and nine credits of electives from the approved list of courses.

Students must file their program of study with the Office of the Dean.

Credits leading to the B.A. in Latin American studies may also be taken at foreign universities or other universities in the United States with Latin American studies programs with the approval of the Latin American Studies Committee, as long as 15 credits in the major are taken at the University of Rhode Island.

Students are highly encouraged to participate in study abroad programs in Latin America.

A list of required and suggested courses acceptable for this program can be found on page 131. Courses not listed are not necessarily excluded from this program, provided that the subject matter deals in some way with Latin America. The Latin American Studies Committee must approve the student's program including any course substitutions.

The Latin American Studies Committee will assist students in the formulation and approval of their programs. The current coordinator is Thomas Morin, associate professor of Hispanic studies in the Department of Modern and Classical Languages and Literatures.

A total of 120 credits is required for graduation. At least 42 of these must be in courses numbered 300 or above.

Linguistics

The Department of Modern and Classical Languages and Literatures offers the Bachelor of Arts (B.A.) degree with a major in linguistics.

Faculty: Professor K. Rogers, *section head*.

Students selecting this field must complete a minimum of 27 credits, as follows: at least 12 credits from LIN 202, 220, 302, 320, 330, 497, 498, and the remaining credits necessary to complete the minimum requirement from APG 200; CMD 373, 375; COM 410; ENG 232, 330, 337, 530, 534, 536; FRN 503; ITL 408; LIN 414, 420; PHL 440; PSY 388.

Students must also attain competence equivalent to the terminal level of 206 in at least one language other than English.

A total of 120 credits is required for graduation. At least 42 of these must be in courses numbered 300 or above.

¹¹ Students must complete all additional Basic Liberal Studies requirements with courses approved by the College of Arts and Sciences (see page 33).

Marine Affairs

The Department of Marine Affairs offers a Bachelor of Arts (B.A.) degree. The Master of Marine Affairs (M.M.A.) and Master of Arts in Marine Affairs (M.A.M.A.) programs are described in the *Graduate Bulletin*.

Faculty: Professor Juda, *chairperson*. Professors Marti and West; Associate Professors Burroughs and D. Nixon; Assistant Professors Gordon and G. Krausse; Professors Emeriti Alexander, Knauss, and Michel.

Students selecting this field are required to complete at least 30 credits (maximum 45 credits) in marine affairs as follows.

All of the following courses (9 credits): MAF 100, 120, 410.

One of the following courses (3 credits): MAF 220, 221.

Five of the following courses (15 credits): MAF 312, 315, 320, 330, 413, 456, 461, 465, 471, 472, 484, and 499.

One additional MAF course must be taken to complete the required 30 credits in marine affairs.

In addition to the above marine affairs requirements, students must also take STA 308 (formerly EST 308) and OCG 123 or 401 (if OCG 123 is taken, it may also be used toward fulfilling the Basic Liberal Studies Natural Sciences requirement).

A total of 120 credits is required for graduation. At least 42 of these must be in courses numbered 300 or above.

Students in other New England states may enroll in the marine affairs program under the New England Regional Student Program. See details on page 21.

Mathematics

The Department of Mathematics offers a Bachelor of Arts (B.A.) degree and a Bachelor of Science (B.S.) degree. The Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees in mathematics are described in the *Graduate Bulletin*.

Faculty: Professor Montgomery, *chairperson*. Professors Beauregard, Datta, Driver, Finizio, Fraleigh, Grove, Kaskosz, Ladas, Lewis, Liu, Pakula, Sine, Shisha, Suryanarayan, and Verma; Associate Professors D. Clark; Assistant Professors N. Eaton, Merino, and C. Roberts; Professors Emeriti Roxin and Schwartzman; Associate Professor Emeritus R. Caldwell; Assistant Professor Emeritus Barron.

BACHELOR OF ARTS

Students in this curriculum may tailor a program to suit their individual needs and interests. They should meet with their advisor no later than the end of the first semester of the sophomore year to plan a complete program. This program, and any subsequent changes in it, must be approved by the advisor and the department chairperson. It must contain at least 32 credits (maximum 45 credits) in mathematics, and include MTH 141, 142, 215, 243, 307, and 316, plus 12 or more additional credits in mathematics, at least three credits of which should be at the 400 level.

MTH 107, 108, and 111 may not be taken by students majoring in mathematics.

A total of 120 credits is required in the B.A. curriculum. At least 42 of these must be in courses numbered 300 or above.

BACHELOR OF SCIENCE

Students in this curriculum may elect either the general program or the applied mathematics option.

General Program. This program stresses basic theories and techniques, and includes an introduction to the principal areas of mathematics. It is recommended for students considering graduate study in mathematics.

Students in this program must complete MTH 141, 142, 215, and 243. These courses should normally be taken in the freshman and sophomore years. Students must complete an additional 27 credits in mathematics, including MTH 307, 316, 425, 435, 436, and 462. MTH 107, 108, and 111 may not be taken by students majoring in mathematics. The student must take PHY 213, 214, 285, and 286 (which will serve to fulfill the student's Basic Liberal Studies Natural Sciences requirements). CSC 211 and 212 are recommended.

Applied Mathematics Option. This program is intended for the student who anticipates a career as an applied mathematician or mathematical consultant with an organization such as an industrial or engineering firm or with a research laboratory. The student learns the mathematical ideas and techniques most often encountered in such work. Although a theoretical foundation is developed, the applications are emphasized.

The student must take MTH 141, 142, 215, and 243, preferably by the end of the sophomore year. The student must complete MTH 307 and 435, 436 or 437, 438, and also CSC 211, 212. In addition, the student must select nine credits from Group I (Mathematics), and nine credits from Group II (Applications).

Group I: MTH 143, 244, 316, 322, 418, 441, 444, 451, 452, 456, 461, 462, 471, and 472. Other courses may be used for this group with prior permission of the department.

Group II: CSC 301, 311, 331, 340, 411, 450; ECN 323, 324, 375, and 376; ELE 210; IME 432, 433; MCE 162, 263; MGS 445, 465, 466, 475; PHY 213 and 285, 214 and 286, 322, 331, 341; STA 409, 412; ZOO 460. Other courses may be used for this group with prior permission of the department.

The Office of the Dean must be informed of any substitutions.

Both programs require 130 credits for graduation.

Minor in Mathematics. Students who wish to declare a minor in mathematics must earn credit for MTH 141, 142, 243, or MTH 131, 132, 244; MTH 215; and two three-credit mathematics courses chosen from MTH 307, 316, 322, or any 400-level course.

Military Science (Army ROTC)

The Department of Military Science conducts the Reserve Officer Training Corps (ROTC) program for students who desire to earn commissions as officers in the United States Army. Students must complete the equivalent of eight semesters of military science subjects. Completion of the four-year military science program qualifies students to petition their academic college for a minor in military science. Participation in the program during the first two years (freshman/sophomore) is without any obligation to the military. After completing University degree requirements and departmental requirements, students are eligible to be commissioned as Second Lieutenants in the United States Army in either the Active Army, Army Reserve, or National Guard.

Faculty: Professor McGowan, *chairperson*. Assistant Professors Kaley, Morin, and Philbrook.

Modern and Classical Languages and Literatures

The Department of Modern and Classical Languages and Literatures offers the Bachelor of Arts (B.A.) degree in classical studies, French, German, Italian, linguistics, Russian, and Spanish, which are described in alphabetical order, as well as courses in Hebrew, Japanese, and Portuguese.

Faculty: Professor Grandin, *chairperson*.

The Department of Modern and Classical Languages and Literatures offers jointly with the Department of English the Bachelor of Arts degree in comparative literature studies (see page 40).

Music

The Department of Music offers a Bachelor of Arts (B.A.) degree and a Bachelor of Music (B.Mus.) degree. The Master of Music (M.M.) degree is described in the *Graduate Bulletin*.

Faculty: Professor R. Lee, *chairperson*. Professors Dempsey, Fuchs, Gibbs, Kent, Ladewig, Pollart, and Rankin; Associate Professors Livingston and Saladino; Visiting Assistant Professor Ann Danis; Special Instructors Kehler and Parillo; Artist Instructors Buttery, J.H. Ceo, Cobb, Dean-Gates, Djokic, Hieken, Hemenway, Heroux, Kocic, Marinaccio, Murray, Noreen, Salazar, Sparks, Spry, Stabile, Sullivan, and Swanson.

BACHELOR OF ARTS

Students selecting music as a major will complete 36 credits (maximum 48) in musicianship, performance, and music electives, as follows:

Musicianship: MUS 131 (3); 121, 122, 225, 226, 227, 228 (12); 221, 222 (6); 223 or upper-division music history (3); 280 (0) and 480 (1).

Performance: four semesters of the principal applied music area, at least two credits per semester (8); three semesters of ensembles appropriate to the principal applied music area (3); seven semesters of MUS 250 (0). A successful audition is required prior to study in the principal applied music area.

Electives: the department strongly recommends that 12 credit hours of electives be taken in music. At least six of these elec-

tives should be in upper-division music courses.

Transfer credits in music theory and performance must be validated by placement examination.

Music majors interested in a career in business and the arts should complete the business minor for nonbusiness students described on page 54.

A total of 120 credits is required for graduation. At least 42 of these must be at the 300 level or above.

BACHELOR OF MUSIC

Students can be admitted to the Bachelor of Music degree program only after a successful audition and should contact the Department of Music for specific requirements.

Transfer credits in music theory and performance must be validated by placement examination.

All Bachelor of Music students will take a piano proficiency examination at the conclusion of one year of study or by the end of the second semester of the sophomore year. Students who have not passed the piano proficiency examination by the end of MUS 172 will be expected to take MUS 271, 272 as needed. Failure to pass the proficiency examination or any portion of it requires reexamination in succeeding semesters. No one will graduate with a Bachelor of Music degree until this requirement is fulfilled.

No student should participate in more than three major ensembles in a single semester.

In addition, each student selects one of the following majors.

Music Education. See page 74 for admission requirements for teacher education programs. Students majoring in music education must complete 89 credit hours in Studies in Music and Professional Education, as follows.

Studies in Music (65 credits): seven semesters of the principal applied music area, two credits per semester (14). Seven semesters of MUS 250 (0); senior recital MUS 450 (0). Four semesters of secondary applied music areas, one credit per semester (4); MUS 171 and 172 are required as secondary applied music areas. Students may meet the requirement of MUS 172 by passing the piano proficiency examination before accumulating 60 credits. Seven semesters of major ensembles appropriate to the

principal applied music area, at 0 or one credit per semester (6). MUS 131 (3); 121, 122, 225, 226, 227, 228 (12); 317 or 321 (3); 221, 222, 223 (9). MUS 169, 170, 173, 175, 177, 179 (6); 235 (3); 311, 312 (5).

Professional Education (24 credits): MUS 280 (0); 480 (2). MUS 238, 339, 340 (9). EDC 250 (1), 484 (12). PSY 113, EDC 312 (6) are required as Professional Education courses but are also counted toward the Social Science requirement in the Basic Liberal Studies program. The piano proficiency examination and all courses listed above, with the exception of MUS 480, must be completed before supervised student teaching (EDC 484).

Free electives: three credits.

A total of 131 credits is required for graduation.

Music History and Literature. Students selecting music history and literature must complete the following. Six semesters of the principal applied music area, two credits per semester (12). Eight semesters of MUS 250 (0). MUS 171 and 172 (2). Students may meet the requirements of MUS 172 by passing the piano proficiency examination before accumulating 60 credits. Six semesters of major ensembles appropriate to the principal applied music area (6). Two of these ensembles may be chamber ensembles. MUS 131 (3); 121, 122, 225, 226, 227, 228, 317 (15); 221, 222, 223 (9). MUS 420 (3). Five of the following upper-division music history courses: 430, 431, 432, 433, 434, 407, 408 (15); 490 in music history (3). MUS 280 (0) and 480 (1). Music electives (5). Twelve credits of free electives, at least six of which should be upper-division music courses.

Students concentrating in music history and literature must take nine credits of foreign language and must have proficiency through 104 in either French or German.

A total of 128 credits is required for graduation.

Music Theory and Composition. Students selecting music theory and composition must complete the following. Seven semesters of the principal applied music area, two credits per semester (14). Eight semesters of MUS 250 (0). Four semesters of secondary applied music areas, one credit per semester (4); MUS 171 and 172 are required as secondary applied music areas. Students may meet the requirement

of MUS 172 by passing the piano proficiency examination before accumulating 60 credits. Six semesters of major ensembles appropriate to the principal applied music area (6). MUS 131(3); 121, 122, 225, 226, 227, 228, 317 (15); 231, 232, 233 (9). Five semesters of applied composition (110V, 210V, 310V, 410V); one or two credits per semester (8). (For the student wishing to specialize in studio composition, three credits of MUS 424 may be substituted for applied composition.) MUS 321 and 420 (6). (For students wishing to specialize in studio composition, three credits of MUS 323 may be substituted for one of these upper-level theory courses.) MUS 490 in music theory and composition (2). Upper-division music history course (3). MUS 235 (3) and 311 (2). MUS 280 (0) and 480 (2). Twelve credits of free electives, at least six of which should be in upper-division music courses.

A total of 128 credits is required for graduation.

Voice. All students in this degree program must take the following music courses. Eight semesters of the principal applied music area. Two semesters of MUS 110 at two credits the first semester and three credits the second (5); two semesters of MUS 210 at three credits each (6); two semesters of 310 and 410 at four credits each (16). Eight semesters of MUS 250 (0); 350 and 450 (0). MUS 171, 172, 271, and 272 (4). Eight semesters of major ensembles appropriate to the principal applied music area at 0 or one credit per semester (7). Two semesters of secondary or chamber music ensembles (2). MUS 283 (3). MUS 131 (3); 121, 122, 225, 226, 227, 228, 317 (15); 221, 222, 223 (9). MUS 235 (3) and 442 (2). MUS 311 (2). MUS 280 (0); 480 (2). Seven credits of free electives, at least three of which should be in upper-division music courses.

Students majoring in voice must also take nine credits of foreign language in any two or more languages. This requirement may be modified or satisfied by advanced placement.

A total of 128 credits is required for graduation.

Classical Guitar. All students in this degree program must take the following music courses. Eight semesters of the principal applied music area. Two semesters of MUS 110 at two credits the first semester and three credits the second (5); two semesters of MUS 210 at three credits each (6); two

semesters of 310 and 410 at four credits each (16). Eight semesters of MUS 250 (0); 350 and 450 (0). MUS 171 and 172 (2). Students may meet the requirement of MUS 172 by passing the piano proficiency examination before accumulating 60 credits. Four semesters of major ensembles (4). Four semesters of guitar ensemble (MUS 399G) and three semesters of playing guitar in chamber music ensembles (MUS 399) (7). MUS 131 (3); 121, 122, 225, 226, 227, 228, 317 (15); 221, 222, 223 (9). Upper-division music history course (3). MUS 235 (3) and 442 (2). MUS 311 (2). MUS 280 (0); 480 (2). Seven credits of free electives, at least three of which should be in upper-division music courses.

A total of 128 credits is required for graduation.

Orchestral Instrument. All students in this degree program must take the following music courses. Eight semesters of the principal applied music area. Two semesters of MUS 110 at two credits the first semester and three credits the second (5); two semesters of MUS 210 at three credits each (6); two semesters of 310 and 410 at four credits each (16). Eight semesters of MUS 250 (0); 350 and 450 (0). MUS 171 and 172 (2). Students may meet the requirement of MUS 172 by passing the piano proficiency examination before accumulating 60 credits. Eight semesters of major ensembles appropriate to the principal applied music area (8). Three semesters of secondary or chamber music ensembles (3). MUS 131 (3); 121, 122, 225, 226, 227, 228, 317 (15); 221, 222, 223 (9). Upper-division music history (3); upper-division music theory (3). MUS 235 (3) and 442 (2). MUS 311 (2). MUS 280 (0); 480 (2). Seven credits of free electives, at least three of which should be in upper-division music courses.

A total of 128 credits is required for graduation.

Piano or Organ. All students in this degree program must take the following music courses. Eight semesters of the principal applied music area. Two semesters of MUS 110 and 210 at three credits each (12); two semesters of 310 and 410 at four credits each (16). Eight semesters of MUS 250 (0); 350 and 450 (0). Four semesters of major ensembles (4). Six semesters of piano accompanying (MUS 371) or playing piano in chamber music ensembles (MUS 399) (6). MUS 131 (3); 121, 122, 225, 226, 227, 228, 317 (15); 221, 222, 223 (9). MUS 420

(3); upper-division music history course (3). MUS 235 (3) and 442 (2). MUS 311 (2). MUS 280 (0); 480 (2). Nine credits of free electives, at least six of which should be in upper-division music courses.

A total of 128 credits is required for graduation.

Minor in Music. Students who wish to declare a minor in music must earn credit for MUS 121, 122, 131, 171, 250 for a minimum of two semesters, and two three-credit music history and literature courses at the 200 level or higher. Additionally, students must earn a minimum of four credits in their principal applied music area and four credits in major ensembles appropriate to the principal applied music area.

Students have the option of designing and developing their music minor program under the advisement and sponsorship of a full-time music faculty member. Petitions outlining and justifying the desired music minor program must be presented by the faculty sponsor to the music faculty for approval. A minimum of 18 credits including at least 12 credits at the 200 level or above is required. Petitions must be submitted as early as possible in a student's undergraduate program, and will not be accepted after a student has completed six credits in music courses.

Philosophy

The Department of Philosophy offers a Bachelor of Arts (B.A.) degree. The Master of Arts (M.A.) program in philosophy is described in the *Graduate Bulletin*.

Faculty: Professor G. Johnson, *chairperson*. Professors Y. Kim, J. Peterson, Schwarz, Wenisch, and Zeyl; Associate Professors J. Kowalski and Pasquerella; Assistant Professors C. Foster and M. Roberts.

Students selecting this field must complete no less than 30 credits (maximum 45 credits) in philosophy. Students must take at least one course from each of the following: logic (101, 451) and ethics (212, 314, 414). They must take both metaphysics (341) and epistemology (342), plus at least two history of philosophy courses (321–324), and at least one course at the 400 level or above. The remaining nine credits may be chosen freely from the list of PHL courses offered by the department. However, students planning graduate work are advised to take PHL 451 and language studies in French or German.

A total of 120 credits is required for graduation. At least 42 of these must be in courses numbered 300 or above.

Physics

The Department of Physics offers a Bachelor of Arts (B.A.) degree and a Bachelor of Science (B.S.) degree. The Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees in physics are described in the *Graduate Bulletin*.

Faculty: Professor Malik, *chairperson*. Professors Bonner, Desjardins, Hartt, Kahn, Kaufman, Letcher, Meyerovich, Muller, Nightingale, Northby, Nunes, Pickart, and Steyerl; Associate Professor Heskett; Adjunct Professors Cuomo and Goodman; Adjunct Assistant Professor Bozyan; Professors Emeriti Penhallow, Stone, and J. Willis.

BACHELOR OF ARTS

Students selecting this field must complete a minimum of 41 credits (maximum 45 credits) in physics, mathematics, and computer science, including: PHY 203, 204, 205, 273, 274, 275 (12), 322 (3), 331 (3), 381, 382 (6), 401 or 402 (1), 451 (3), 491, 492 (3), MTH 244 (3), CSC 201 or 211, 212 (7 or 8).

It is strongly recommended that students take MTH 141 and 142 in the freshman year. If the student is considering graduate study, it is recommended that courses in French, German, or Russian be elected.

A total of 120 credits is required in the B.A. program. At least 42 of these must be in courses numbered 300 or above.

BACHELOR OF SCIENCE

This curriculum provides a general background in both theoretical and experimental physics. It forms an adequate foundation for further study at the graduate level toward an advanced degree, and also prepares the student for a career as a professional physicist in industry or government.

Initiative, independent solution of laboratory problems, and research are encouraged in the advanced laboratory courses.

In addition to the major, students are encouraged to use the large block of elective credits to develop a program of study as a minor (described under "Curriculum Requirements" on page 33) in applied or

interdisciplinary fields, such as acoustics, geophysics, optics, energy, astronomy/astrophysics, atmospheric science, computational physics, mathematical physics, physics education, chemical physics, ocean physics, and engineering physics. As with all minors, it will be recorded on the student's final transcript.

The following courses will usually be required for the B.S., but exceptions and/or substitutions are possible, and can be arranged by consulting the department. For example, a well-prepared student can enroll for physics in the first semester of the freshman year, or courses in a related discipline may be taken instead of physics courses.

A total of 129 credits is required for graduation.

Freshman Year

First semester: 16 credits

MTH 141 (4), PHY 203, 273 (4), and Basic Liberal Studies requirements and electives (7).

Freshman Year

Second semester: 16 credits

MTH 142 (4), PHY 204, 274 (4), CSC 211 (4), Basic Liberal Studies requirements and electives (4).

Sophomore Year

First semester: 17 credits

MTH 243 (3), PHY 205, 275 (4), CSC 212 (4), Basic Liberal Studies requirements (6).

Sophomore Year

Second semester: 15 credits

MTH 244 (3), PHY 331 (3) and 306 (3), and Basic Liberal Studies requirements (6).

Junior Year

First semester: 18 credits

PHY 322 (3) and 381 (3), MTH 215 (3), Basic Liberal Studies requirements (6), and free electives (3).

Junior Year

Second semester: 15 credits

Mathematics elective at the 300 or 400 level (3), PHY 382 (3) and 420 (3), and free electives (6).

Senior Year

First semester: 15 credits

PHY 451 (3), 483 (3), MTH 461 (3), and free electives (6).

Senior Year

Second semester: 16 credits

PHY 402 (1), 452 (3), 455 (3), 484 (3), and free electives (6).

Physics and Physical Oceanography

The Department of Physics and the Graduate School of Oceanography offer a Bachelor of Science (B.S.) degree in physics and physical oceanography.

Coordinator: Professor Malik (Physics). The faculty consists of the members of the Department of Physics and the physical oceanography faculty of the Graduate School of Oceanography.

This program includes a comprehensive background in physics and a solid introduction to physical oceanography. The curriculum includes a full set of physics and mathematics courses required for a B.S. in physics, with extra emphasis on classical physics, plus additional upper-division or graduate-level courses in fluid dynamics and physical oceanography.

The senior physics research project (PHY 483 and 484) will be undertaken in the Graduate School of Oceanography (GSO) under the supervision of a GSO faculty member. In addition, students may find summer employment or participate in oceanographic research cruises after their junior year.

Students graduating in this course of study will be well prepared to pursue either conventional physics career options or careers in physical oceanography. Technical positions in private or government oceanographic research laboratories are available for physical oceanographers at the B.S. level. Students who continue on to graduate studies should expect to find high demand for physical oceanographers with advanced degrees. It is recommended that students planning to attend an oceanography graduate school take PHY 520 (Classical Dynamical Theory); students wishing to keep open the option of physics at the graduate level should take PHY 452 (Quantum Mechanics). Students entering the URI Graduate School of Oceanography from this program will have a significant head start compared to those entering from most other undergraduate institutions.

A total of 129 credits is required for graduation.

Freshman Year

First semester: 15-16 credits

MTH 141 (4), PHY 203, 273 (4), CHM 101, 102 (4), Basic Liberal Studies requirements (3-4).

Freshman Year

Second semester: 18 credits

MTH 142 (4), PHY 204, 274 (4), CSC 211 (4), Basic Liberal Studies requirements (6).

Sophomore Year

First semester: 17 credits

MTH 243 (3), PHY 205, 275 (4), CSC 212 (4), Basic Liberal Studies requirements (6).

Sophomore Year

Second semester: 15-18 credits

MTH 244 (3), PHY 306 (3), 331 (3), Basic Liberal Studies requirements (6-9).

Junior Year

First semester: 18 credits

PHY 322 (3), 381 (3), 425 (3), MTH 215 (3), 461 (3), STA 409 (3).

Junior Year

Second semester: 15 credits

MCE 354 (3), MTH elective at the 300 or 400 level (3), PHY 382 (3) and 420 (3), free elective (3).

Senior Year

First semester: 18 credits

OCG 501 (3), PHY 451 (3), 483 (3), 520 (3) (optional), free electives (6).

Senior Year

Second semester: 13-16 credits

OCG 510 (3), PHY 402 (1), 452 (3) (optional), 455 (3), 484 (3), free elective (3).

Political Science

The Department of Political Science offers the Bachelor of Arts (B.A.) degree. The Master of Arts (M.A.) in political science and the Master of Public Administration (M.P.A.) programs are described in the *Graduate Bulletin*.

Faculty: Professor Tyler, *chairperson*. Professors Hennessey, Killilea, Leduc, L. Rothstein, A. Stein, and Zucker; Associate Professor Hamilton; Assistant Professors Genest, Moakley, and Petro; Professors Emeriti Milburn, Warren, and S.W. Wood.

Students selecting this field must complete a minimum of 30 credits (maximum 45 credits) in political science, including PSC 113 (3) and 116 (3).

The remaining 24 credits will reflect the student's emphasis, though at least one course must be selected in each of the following three subfields: American politics, world politics, and political theory.

Students completing both the Bachelor of Arts degree in political science and the Bachelor of Science degree in engineering may use courses in the political science major to satisfy Basic Liberal Studies requirements for the Bachelor of Arts degree. The College of Engineering and the Department of Political Science have established a curriculum that allows for the completion of the two degrees and a public-sector internship in five years.

A total of 120 credits is required for the B.A. in political science. At least 42 of these must be in courses numbered 300 or above.

Portuguese

The Department of Modern and Classical Languages and Literatures offers a number of undergraduate courses in Portuguese.

Faculty: Professor McNab, *section head*. Special Lecturer Perdigão.

Psychology

The Department of Psychology offers the Bachelor of Arts (B.A.) degree. The Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degree programs in psychology are described in the *Graduate Bulletin*.

Faculty: Professor Kulberg, *chairperson*. Professors Berman, Biller, J.L. Cohen, Collyer, Faust, Florin, Gelles, Grebstein, Gross, A. Lott, B. Lott, Prochaska, Quina, Silverstein, N. Smith, Stevenson, Valentino, Velicer, and Willoughby; Associate Professors Brady, Harlow, Morokoff, and W.G. Willis; Assistant Professor Ruggiero; School Psychology Field Coordinator DeZolt; PCC Interim Director Varria Garis; Professors Emeriti Merenda and Vosburgh.

Students in this field may follow either a general program or a preparatory program for an advanced degree.

The general program requires a minimum of 30 credits (maximum 45 credits) to be distributed as follows: PSY 113 (3); at least one course from the group PSY 232 (3), 235 (3), 254 (3); both PSY 300 (3) and 301 (3); plus additional psychology electives to total 30 credits, with the exception of PSY 499. Students interested in careers at the B.A. level should consult the department's *Psychology Undergraduate Manual* and their academic advisors to select additional courses.

The preparatory program for those considering graduate school adds to the requirements listed above: PSY 232 (3), 235 (3), and 254 (3); at least four courses from the group PSY 310 (3), 335 (3), 361 (3), 381 (3), 384 (3), 385 (3), 388 (3), 391 (3), and 434 (3). Additional courses should be selected only after consultation with an advisor.

A total of 120 credits is required for graduation. At least 42 of these credits must be in courses numbered 300 or above.

Russian

The Department of Modern and Classical Languages and Literatures offers the Bachelor of Arts (B.A.) degree with a major in Russian.

Faculty: Professor Aronian, *section head*. Professor K. Rogers.

Students selecting this field must complete at least 30 credits (maximum 45 credits), not including RUS 101, 102.

Students in secondary education (see pages 74-75) must take 36 credits in Russian.

A total of 120 credits is required for graduation. At least 42 of these must be in courses numbered 300 or above.

Sociology

The Department of Sociology and Anthropology offers the Bachelor of Arts (B.A.) degree in sociology and the Bachelor of Science (B.S.) degree in applied sociology.

Faculty: Professor Poggi, *chairperson*. Professors Carroll, Gelles, Peters, and Reilly; Associate Professors A. Albert, Danesh, Mederer, and Travisano; Assistant Professors Cunnigen and Shea; Lecturer Chabot.

BACHELOR OF ARTS

Students selecting this curriculum must complete a minimum of 30 credits (maximum 45 credits) in sociology, including: SOC 100, 301, 401, 495, and two courses selected from SOC 240, 242, 336, 413, 428, 452. At least 18 of the 30 credits must be at the 300 level or above.

SOC 495 is to be taken during the senior year. SOC 102 may not be taken for major credit. Students interested in anthropology are referred to the anthropology major previously described in this bulletin.

A total of 120 credits is required for graduation. At least 42 of these must be in courses numbered 300 or above.

BACHELOR OF SCIENCE IN APPLIED SOCIOLOGY

Students in this curriculum may elect either the public policy option or the organizational analysis option. Students must tell the Office of the Dean which option they are choosing.

Public Policy Option. A minimum of 30 credits in sociology is required including SOC 100, 301, 401, 402, 505 (20); one 400-level sociology course; and six credits in sociology at the 300 level or above.

In addition, students selecting this option must complete ECN 201 and 202 (6); MTH 107 or 108 or 111 or QBA 102 (3); STA 308 and 412 (6); CSC 201 (3);¹² WRT 333 (3); HSS 350 (3); PSC 113 (3); PSC 221 and 422 or PSC 304 and 466 or PSC 460 and 466 (6); PSC 369 and 483 (6).

A total of 126 credits is required for graduation.

Organizational Analysis Option. A minimum of 30 credits in sociology is required including SOC 100, 301, 350, 401 (20); one 400-level sociology course; and six credits in sociology at the 300 level or above.

In addition, students selecting this option must complete ECN 201 and 202 (6); MTH 107 or 108 or 111 or QBA 102 (3); STA 308 and 412 (6); CSC 201 (3);¹² WRT 333 (3); MGT 301, 302, 306, 380, 407, and either BSL 333 or MGT 408 or MGT 453 (18).

Due to limited staff and facilities, admission to the organizational analysis option is open to only 15 students per graduating class. Applications for admission will be reviewed only once each year, usually on or about March 1. Students must apply

by the end of February by submitting their names to the University College advisor for sociology or to the chairperson of the Department of Sociology and Anthropology. To be considered for the organizational analysis option, students must have earned a minimum of 45 credits by the application deadline and must have at least a 2.00 quality point average. Preference for admission will be given to those individuals with the highest quality point averages.

A total of 126 credits is required for graduation.

Spanish

The Department of Modern and Classical Languages and Literatures offers the Bachelor of Arts (B.A.) degree with a major in Spanish. The Master of Arts (M.A.) program in Spanish is described in the *Graduate Bulletin*.

Faculty: Professor Gitlitz, *section head*. Professors Manteiga and Navascues; Associate Professors Morin, Trubiano, and C. White.

Students selecting Spanish as a major will complete a minimum of 30 credits (maximum 45 credits), including SPA 325 and three 400-level courses (excluding SPA 421). SPA 421 may be used as part of the remaining 18 required credits. SPA 101, 102, 121, 391, 392, and 393 cannot be counted toward the major. LIN 202 and 220 and, with permission of the advisor, the section head, the department chairperson, and the Dean, courses in allied fields such as history, art, and anthropology may also be selected. These requirements are the same for the secondary education major.

A summer field workshop (SPA 310) in Spain or Spanish America is occasionally offered for three to six credits. For information, see the section head.

A total of 120 credits is required for graduation. At least 42 of these must be in courses numbered 300 or above.

Statistical Science

The Department of Computer Science and Statistics offers the Bachelor of Science (B.S.) degree in statistical science. The Master of Science (M.S.) in statistics and the Doctor of Philosophy (Ph.D.) in applied mathematical sciences with a specialization in statistics are described in the *Graduate Bulletin*.

Faculty: Professor Hanumara, *section head*. Professors Carney and Heltshe; Associate Professor Lawing; Assistant Professor Kelly; Professors Emeriti Hemmerle, Merenda, and Smith.

The program in statistical science emphasizes the application of statistics to day-to-day problems in our society. Students are required to take courses in mathematics and computer science. Training in an application area is also required. Students graduating from this program are well trained to function in positions such as junior analyst, statistical analyst, statistical programmer, and consultant programmer, or to continue with graduate study in statistics.

Students must complete a minimum of 44 credits as follows: STA 220 (3), 409 (3), 412 (3), 413 (3), 415 (3), 416 (3), MTH 451 (3), 452 (3), CSC 211 (4), 212 (4), 331 (3), 406 (3) or 450 (3); six additional credits chosen from IME 432 (3), 433 (3), 435 (3), or any computer science, mathematics, or statistics courses at the 300 level or above.

Also required are one COM course (3), MTH 141 (4), 142 (4), 215 (3), 243 (3), and one WRT course (3) or CMS 101 (6).

For training in an application area, 12 credits at the 200 level or above in an area other than computer science, mathematics, or statistics are required. Examples of application areas include physics, psychology, English, sociology, and zoology. The courses will be selected by the student and the student's advisor from a list prepared by the Department of Computer Science and Statistics in consultation with the application area chairperson.

A list of courses approved for an application area must be filed with the Office of the Dean.

A total of 130 credits is required for graduation.

First Year

First semester: 16 credits

MTH 141 (4), WRT elective (3), Basic Liberal Studies requirements or electives (9).

First Year

Second semester: 16 credits

STA 220 (3), MTH 142 (4), COM elective (3), Basic Liberal Studies requirements or electives (6).

¹² QBA 201 and 202 may be substituted for STA 308 and 412, and QBA 207 may be substituted for CSC 201 if these courses are already completed when the student transfers into the B.S. program.

Second Year*First semester: 16 credits*

CSC 211 (4), MTH 243 (3), application elective (3), Basic Liberal Studies requirements or electives (6).

Second Year*Second semester: 16 credits*

STA 409 (3), CSC 212 (4), MTH 215 (3), application elective (3), Basic Liberal Studies requirement or elective (3).

Third Year*First semester: 18 credits*

STA 412 (3), MTH 451 (3), 361 (3), application elective (3), Basic Liberal Studies requirements or electives (6).

Third Year*Second semester: 16 credits*

STA 413 (3), MTH 452 (3), CSC 450 (3), application elective (3), Basic Liberal Studies requirements or electives (4).

Fourth Year*First semester: 16 credits*

STA 415 (3), CSC 331 (3), IME 432 (3), STA 491 (3), Basic Liberal Studies requirements or electives (4).

Fourth Year*Second semester: 16 credits*

STA 416 (3), 492 (3), IME 433 (3), Basic Liberal Studies requirements or electives (7).

Theatre

The Department of Theatre offers a Bachelor of Arts (B.A.) degree and a Bachelor of Fine Arts (B.F.A.) degree. Permission to register for work toward the B.F.A. in theatre must be obtained through a departmental review.

Faculty: Professor J. Swift, *chairperson*. Professor Emery; Associate Professors G. Armstrong, McGlasson, and Wittwer. **Staff:** Technical Director Galgoczy and Costume Shop Manager Tschantz-Dwyer. Guest artists supplement the regular faculty in all areas of theatre.

Productions at the University cover the range of theatre forms, ancient to modern, with an emphasis on contemporary and experimental work. All members of the University community may participate in productions.

BACHELOR OF ARTS

The B.A. program in theatre is intended for students who wish to receive a general education in theatre within a liberal arts framework. A total of 33 credits (maximum 45 credits) is required as follows: THE 111 (3), 161 (3), 181 (3), 221 (3), 250 (3), 261 (3), 291 (1), 321 (3), 391 (2). Select nine credits from THE 381, 382, 383, 384, 481, 482, 483, 484. Select three credits from ENG 362, 366, 446, 472, 477. Potential B.A. candidates are urged to complete THE 111, 117, 161, and 181 by the end of their freshman year.

B.A. candidates may elect up to 12 more credits in theatre with the approval of their department advisor.

A total of 120 credits is required for graduation. At least 42 of these must be in courses numbered 300 or above.

BACHELOR OF FINE ARTS

The B.F.A. program in theatre is intended for highly motivated students who wish their education to emphasize a major theatrical field of interest. The program offers concentrated study in acting, design and theatre technology, directing, and stage management. All B.F.A. students are required to complete 34 hours in core courses distributed as follows: THE 111 (3), 161 (3), 181 (3), 221 (3), 250 (3), 261 (3), 291 (2), 321 (3), 351 or 352 (3), two courses from 381 (3), 382 (3), 383 or 384 or 481 (3) to total six credits, and 391 (2). All B.F.A. candidates are urged to select a course from ENG 362, 366, 446, 472, or 477, and to complete THE 111, 161, and 181 by the end of their freshman year. Entrance into the B.F.A. program requires approval from the Department of Theatre.

In addition to the core requirements, each student selects one of the following areas of specialization. Students must notify the Office of the Dean of the area of specialization they have selected.

Acting. Students selecting acting must complete an additional 38 credits distributed as follows: THE 117 (3), 211 and 212 (4), 213 and 214 (2), 300 or 301 (3), 311 and 312 (6), 313 and 314 (2), 350 (1), 400 or 401 (3), 411 and 412 (6), 417 and 418 (2). Select six credits from THE 217, 227, and 413. Recommended electives include courses in related fields such as anthropology, art, communication studies, history, literature, music, psychology, and sociology.

Design and Theatre Technology. Students selecting design and theatre technology must complete an additional 31 credits distributed as follows: THE 300 (3), 301 (3), 351 or 352 (3) to complete the sequence begun in the core curriculum; 350 (1), 355 (3), 365 (3), 371 (3); and 12 credits selected from 362 (3), 400 (3), 401 (3), 415 (12), 451 (3), 455 (3), 463 (3), 465 (3), 475 (3). Recommended electives include ART 207, 251, 252, and courses in related fields.

Directing. Students selecting directing must complete an additional 33 or 35 credits distributed as follows: THE 300 or 301 (3), 322 (3), 331 (3), 341 (3), 355 or 365 or 371 (3), 400 or 401 (3), 413 (3), 420 (3), 481 or 482 or 483 or 484 (3). They must also complete a one-year sequence in acting selected from the following options:

1. 211 (2), 213 (1), 212 (2), and 214 (1), to total (6)
2. 411 (3), 417 (1), 412 (3), and 418 (1), to total (8)

Recommended electives include courses in anthropology, art history, history, literature, music, psychology, and sociology.

Stage Management. Students selecting stage management must complete an additional 30 credits distributed as follows: COM 320 (3); MGT 300 (3); THE 300 (3), 301 (3), 341 (3), 355 or 365 (3), 371 (3), 400 (3), 401 (3), 441 (3).

B.F.A. students selected for an internship program may substitute up to 12 credits from theatre courses in their area of specialization, subject to departmental approval. Transfer students, late entries into the theatre major, and others wishing to modify this schedule of B.F.A. requirements may do so in consultation with their faculty advisor and with the permission of the department.

A total of 130 credits is required for graduation.

Urban Affairs

The Urban Affairs Program is administered by the graduate program in community planning. The Coordinating Committee offers three majors in the College of Arts and Sciences for the Bachelor of Arts (B.A.) degree: urban social processes in the urban environment, policy formation in the urban environment, and spatial development in the urban environment. The courses that comprise these majors are offered by colleges throughout the University.

The Urban Affairs Program is described on page 12.

Students who select one of these three majors must complete seven courses in the common core and four courses chosen from the specialization courses.

Common Core: URB 210 and 498 or 499 (6); one course selected from CSC 201; STA 220, 308, or 409; QBA 201; PSY 300; SOC 301 (3); three courses selected from CNS 340; CPL 410; ECN 402; HIS 339; PSC 221, 495; SOC 214, 240 (9); and one course selected from HSS 222, 350; MGT 301; PSC 491, 498 (3). It is also recommended that students complete CPL 410.

Each of the majors requires a minimum of 33 credits. Courses applied to fulfilling the core requirements may not be applied to a specialization requirement, nor may courses applied to Basic Liberal Studies requirements be used in the core or specialization areas.

Students majoring in urban affairs must file a program of study with the Office of the Dean.

Students who wish to major in one of these should consult the appropriate member of the Urban Affairs Program Coordinating Committee or the director of the graduate program in community planning for assistance in the formulation and approval of their majors.

A total of 120 credits is required for graduation. At least 42 of these credits must be in courses numbered 300 or above.

Urban Social Processes. This major focuses on the interaction between the individual and the urban social system with a concern for careful theoretical analysis, empirical study, and modification through active intervention. It is designed to examine urban social systems, explore urban social issues, and investigate individual and systems-change strategies. Students who choose this concentration gain an understanding of the systemic forces that act on individuals in urban societies to produce both positive and negative outcomes. Poverty and social class, the welfare system, race, crime, rapid environmental change—all generate social issues that take on particular significance in an urban setting and have a dramatic impact on the lives of urbanites. In addition to a thorough grounding in conceptual approaches, students are directed toward research and intervention techniques that they may extend, with

graduate training, into the social sciences, criminology, social work, community planning, and other urban-oriented fields. Students seeking jobs at the baccalaureate level may work in social agencies (e.g., welfare, youth development, the criminal justice system), the governmental departments that sponsor and monitor these agencies, or specialized educational facilities (e.g., halfway houses, preschool enrichment programs, alternative high schools).

Students are expected to satisfy the common core requirements. Urban social processes majors must take SOC 214 as part of the common core and are strongly urged to take ECN 402. In addition, students are also required to select four courses from the following: APG 319; CNS 401; COM 315; ECN 403; HDF 220, 434; HIS 339; MGT 301; PSC 420, 483, 486, 495; PSY 335; SOC 240, 241, 314, 316, 320, 330, 336, 438.

A total of 120 credits is required for graduation. At least 42 of these must be in courses numbered 300 or above.

Policy Formation. This major is designed to identify the decision-making processes within the metropolis, examine the ways in which public policies are formulated and implemented, and consider ideas about the substance as well as the outcome of the policy-formation processes. An understanding of such decision-making processes requires knowledge of the political, administrative, managerial, planning, and economic aspects of urban life. Students completing the major should be prepared for entry-level administrative jobs in government agencies, business firms and community organizations, or for activist careers in politics. They might undertake graduate work in law, public administration, community planning, business, or related disciplines.

Students are expected to satisfy the common core requirements. Policy formation majors must take PSC 221 as part of the common core. They are also expected to select four courses from the following: CPL 410; ECN 342, 402, 403; FIN 331, 341; HIS 339, 341; MAF 516; MGT 321, 422, 423; PSC 483, 495, 498; SOC 214. Practicum or internship experience is optional for this major. It may be obtained through URB 397.

A total of 120 credits is required for graduation. At least 42 of these must be in courses numbered 300 or above.

Spatial Development. This major gives the student an interdisciplinary viewpoint of the spatial structure and environmental character of the city. The curriculum is designed to focus special attention on the arrangement, allocation, and interrelationships of human and physical resources. Man's relation to the urban ecosystem is examined in terms of the processes, patterns, networks, and activities that produce the spatial and temporal organization of urban communities. Analytical and methodological skills may be acquired from courses in cartography, remote sensing, and statistics. The structure of the major should prepare the student to deal more effectively with the increasing problems of rapid urban growth and environmental deterioration. These problems have increased the need for a better understanding of the complex metropolis.

Students in the spatial development major can work in a variety of public and private enterprises. Career choices and employment opportunities are available in activities such as urban systems analysis, economic impact studies, cartographic drafting and air photo analysis, industrial location and regional development, and urban environmental problems. Spatial development majors should be prepared for work in organizations or agencies that handle questions such as equal allocation of resources, reduction of regional disparities in goods and services, and development of effective alternatives to problems in housing, poverty, pollution, and other human concerns. These organizations can be in both the private and the public sector.

Students are expected to satisfy the common core requirements. Spatial development majors must take CPL 410 as part of the common core. They are also required to select four courses from the following: BSL 333; CPL 410, 434, 530; CVE 315; ECN 402; FIN 341; MAF 516; PSC 466, 495; SOC 214; ZOO 262. Practicum or internship experience is strongly recommended for this major. It may be obtained through URB 397.

A total of 120 credits is required for graduation. At least 42 of these must be in courses numbered 300 or above.

Women's Studies

This interdepartmental program in the College of Arts and Sciences leads to a Bachelor of Arts (B.A.) degree in women's studies. The aim of the program is to provide an option for students who are interested in the interdisciplinary study of the culture and experiences of women.

Faculty: Professor Reilly, *director*. Assistant Professor Shugar.

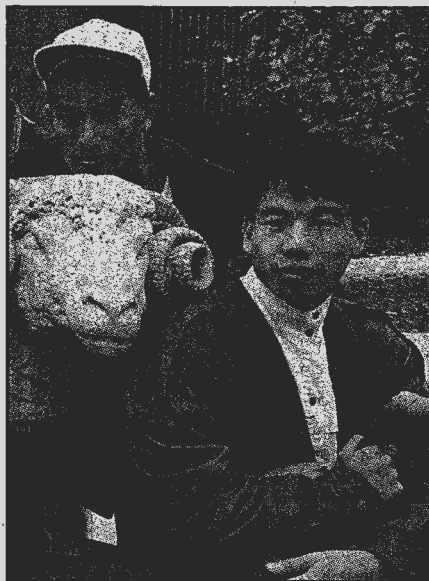
The women's studies program requires 30 credits for a major. Five required courses are: WMS 210, 300, 310, 330, 400. Five courses needed to complete the concentration may be selected from: ARH 285; CNS 401; COM 310 (Topics: Rhetoric of the Women's Movement and Rhetoric of Reproductive Rights); COM 420 (Topic: Rhetoric of Early Women Suffragists); ECN 404; ENG 260, 385; FSN 308; HDF 330, 430, 432, 433, 437, 505, 559; HIS 118, 145, 351, 352, 376; LET 151E; MGT 401; NUR 150; PED 375; PHL 210; PSY 470A, 470B, 470C, 479K, 480, 625A, 625C; SOC 212, 242, 316, 413, 420, 430; WMS 150, 333, 350, 450. In addition to this list, there are special courses offered by various departments each year that may also be selected with prior approval of the Women's Studies Advisory Committee and some additional preapproved topics courses not offered on a regular basis.

Students must file a program of study with the Office of the Dean.

The Women's Studies Advisory Committee also strongly recommends that majors take an additional 18 credits in a specialized area as a minor.

A total of 120 credits is required for graduation. At least 42 of these must be in courses numbered 300 or above.

COLLEGE OF BUSINESS ADMINISTRATION



Frank S. Budnick, *Interim Dean*
Jane M. Stich, *Assistant Dean*

The six majors in the College of Business Administration allow the student to develop competence in a special field of interest and prepare him or her to meet the changing complexities of life and leadership in the business community. Majors are offered in accounting, finance, general business administration, management, management science and information systems, and marketing.

Basic courses required of all undergraduates at the University introduce the student to the humanities, social sciences, physical and biological sciences, letters, foreign language and culture, and the arts. The business curriculums develop the student's professional capabilities through a broad group of business courses with specialization in one area of study. Business programs provide a strong foundation in accounting, information systems, marketing, organization and management theory, industrial relations, operations management, and statistics. The college emphasizes behavioral studies and computer technology to meet the needs of the business community and society as a whole. Emphasis is placed on the total business

environment as a part of the national and world economic structure. Theory, analysis, and decision making are stressed in all areas of learning.

The College of Business Administration is a professional school and has divided its courses into lower and upper divisions. The lower-division courses constitute those taught in the freshman and sophomore years; the upper-division courses constitute those taught in the junior and senior years. Courses taken by transfer students at the lower-division level may be applied to satisfying upper-division requirements only after successful completion of a validating examination. All 500- and 600-level courses offered by departments in the College of Business Administration are open to matriculated graduate students only.

A student enrolled in this college must complete the curriculum in one of the majors and must obtain a cumulative quality point average of 2.00 or better for all required courses in the major. Students wishing permission to substitute required courses or waive other requirements may petition the college's Scholastic Standing Committee. Petition forms are available in the Office of the Dean.

All students are initially enrolled in University College, where they complete General Education and business core courses. Core requirements include accounting, economics, management science and information systems, mathematics, and statistics. Students apply for transfer after the completion of 45 credits; therefore, the earliest a student may apply is the second semester of the sophomore year. Students who have not satisfied entrance requirements may petition the Scholastic Standing Committee of the college for a waiver of those requirements during their fourth or succeeding semesters. Students in the University College business programs who have not met entrance requirements to the College of Business Administration are permitted to enroll only in 100- and 200-level business courses and in nonbusiness courses.

To ensure that students in business majors have access to required courses, a strict registration policy will be followed with regard to business courses. Highest priority will be given to students for whom a course is a program requirement, as stated in this bulletin, followed by any student in the College of Business Administration.

Curriculum Requirements

The following two years are common to all majors.

Freshman-Year Program: 15 credits in each semester. The sequence QBA 101-102 is begun in the first semester and finished in the second, with the balance of credits in General Education.

Sophomore-Year Program: 15 credits in each semester. The ACC 201, 202, ECN 201, 202, and QBA 201, 202 sequences are begun in the first semester and completed in the second. QBA 207 and WRT 227 are taken in alternate semesters. The balance of credits is made up of General Education and free electives.

General Education Requirements. Students are required to select and pass 39 credits of course work from the General Education requirements as listed on page 9. Specific requirements of the College of Business Administration in each group are listed below:

Group A. A minimum of three credits in literature.

Groups F, L, and N. Any course for which prerequisites have been met.

Group M. QBA 101 in the freshman year.

Group S. ECN 201, 202 in the sophomore year.

Group C. COM 101; WRT 101, 103, 201, or 333 in the freshman year; WRT 227 (Group Cw) in the sophomore year.

Electives. Professional electives are upper-level courses offered by departments in the College of Business Administration and the Department of Economics. Liberal electives are courses offered by departments outside the College of Business Administration.

Free electives may be either professional or liberal electives.

Minors. College of Business Administration majors are encouraged to develop a nonbusiness minor. Special permission may be given for business majors to pursue a business minor as long as the number of credits for the business minor falls within the 50 percent rule of the American Assembly of Collegiate Schools of Business (AACSB). This rule requires that 50 percent of a student's curriculum is chosen from General Education requirements or courses in colleges other than the College of Business Administration.

International Business Studies Minor. In cooperation with the Department of Modern and Classical Languages and Literatures, the College of Business Administration offers an opportunity for students to include an international emphasis within their undergraduate business major. The business requirements include a major in finance, general business administration, management, or marketing with professional electives in multinational finance, international dimensions of business, and international marketing. The student also develops a language component, choosing from French, German, Italian, or Spanish. In addition, studies in international politics, European history, and courses in history and literature of the target country are included. Following the junior or senior year, students have the opportunity to compete for summer, semester, or year-long professional internship positions with firms in Europe.

Business Minor for Nonbusiness Students. The College of Business Administration has developed a minor for nonbusiness students that will provide them with an opportunity to gain some business career skills. The minor includes basic foundation courses that must be completed by all students and upper-level courses selected from the various functional areas. To be eligible for a minor in business administration, nonbusiness students must meet the quality point average requirement for admission to the College of Business Administration, must have completed a math course (M), and must have completed ECN 201, 202; QBA 201 or STA 308; QBA 207 and ACC 201, 202. The minor form will be signed after completion of the aforementioned courses and after verification of the quality point average. To complete the minor, students will select courses at the 300 level from accounting, finance, general business administration, management, management science and information systems, and marketing. Interested students should contact the Director of Undergraduate Programs in the College of Business Administration for further information. Students are required to meet all prerequisites. FIN 301 and OMT 309 have a prerequisite of QBA 202. All 300-level courses in the College of Business Administration require junior standing in a degree-granting college.

Accounting

The Department of Accounting offers a curriculum leading to the Bachelor of Science (B.S.) degree in accounting. The Master of Science (M.S.) degree, which provides the education recommended by the American Institute of Certified Public Accountants for the practice of public accounting, is described in the *Graduate Bulletin*.

Faculty: Professor Schwarzbach, *chairperson*. Professors S. Martin, Matoney, and Vangermeersch; Associate Professors Boyle, Geiger, and Higgins; Assistant Professors Beckman, Hazera, and Power.

The increased scope of governmental and business activities has greatly extended the field of accounting and has created an unprecedented demand for accountants in both government and industry. This curriculum has been designed to meet that demand.

In addition to providing a general cultural and business background, the curriculum offers specialized training in the fields of general accounting, cost accounting, and public accounting. It offers specific, basic training to students who wish to become industrial accountants, cost analysts, auditors, credit analysts, controllers, income tax consultants, teachers of specialized business subjects, certified public accountants, government cost inspectors, or government auditors.

The broad scope of the courses offered makes it possible for a student who is interested in any of the fields of accounting to obtain fundamental training in the field of his or her choice, whether this training is to be used as an aid to living or as a basis for graduate study.

Junior Year

First semester: 15 credits

ACC 311 (3) and 321 (3), FIN 301 (3), MGT 301 (3), and one free elective (3).

Junior Year

Second semester: 15 credits

ACC 312 (3), 443 (3), MKT 301 (3), OMT 309 (3), and one professional elective (3).

Senior Year

First semester: 15 credits

ACC 431 (3) and 461 (3), BSL 333 (3), ECN or FIN elective (3),¹ and one free elective (3).

Senior Year
Second semester: 15 credits

ACC 415 (3), MGT 410 (3), one professional elective (3), and two free electives (6).

Note: All accounting majors are required to complete a minimum of three credit hours in each of the following areas. *Behavioral Science:* fulfilled by taking PSY 113, SOC 100, 102, or 204 as a free elective. *Ethical Foundations:* fulfilled by taking PHL 212 as a Letters General Education requirement or as a free elective; or MGT 380 as either a professional elective or a free elective. *Political Foundations:* fulfilled by taking PSC 113, 116, or GEG 104 as a free elective.

Finance

The Department of Finance and Insurance offers a curriculum leading to the Bachelor of Science (B.S.) degree in finance. The Master of Business Administration (M.B.A.) degree with an opportunity for specialization in finance is described in the *Graduate Bulletin*.

Faculty: Associate Professor Dash, *chairperson*. Professors McLeavey and Rhee; Associate Professors Chang, Lai, Lord, and Oppenheimer; Assistant Professors Kang and Y. Lee.

A major in finance prepares the student for managerial positions in the private, public, and nonprofit sectors of the economy. The curriculum emphasizes both financial decision making and implementation.

Careers in finance are found in: 1) commercial banking and other financial institutions; 2) security analysis, portfolio, and related investment management; 3) corporate financial management leading to positions as treasurer, controller, and other financial administrative positions; 4) financial administration tasks in federal and state agencies as well as in the nonprofit sector in hospitals, nursing homes, and educational institutions.

Junior Year
First semester: 15 credits

FIN 301 (3) and 331 (3), MGT 301 (3), OMT 309 (3), and one liberal elective (3).

Junior Year
Second semester: 15 credits

BSL 333 (3), FIN 322 (3), MKT 301 (3), one professional elective (3), and one liberal elective (3).

Senior Year
First semester: 15 credits

Two finance electives (6), FIN 452 (3), one professional elective (3), and one liberal elective (3).

Senior Year
Second semester: 15 credits

One finance elective (3),² MGT 410 (3), two professional electives (6), and one free elective (3).

General Business Administration

The College of Business Administration offers a curriculum leading to the Bachelor of Science (B.S.) degree in general business administration. The general business administration curriculum offers the student an opportunity to study all phases of business operation. It is particularly suitable for: 1) those students who are planning to operate their own businesses and are seeking a broad business background; 2) those who are preparing for positions in large organizations with training programs in which specialization is taught after employment; and 3) those who desire a general business background at the undergraduate level prior to taking more specialized graduate work.

Students who major in the general administration curriculum will be limited to a maximum of nine credits of professional electives in a specific business or economics major. A general business administration student should take a broad spectrum of courses and not concentrate in one special field of study. For students interested in courses offered outside the College of Business Administration, four professional electives may be taken from the 300- and 400-level courses offered in other colleges.

Junior Year
First semester: 15 credits

FIN 301 (3), MGT 301 (3), MKT 301 (3), OMT 309 (3), and one free elective (3).

Junior Year
Second semester: 15 credits

BSL 333 (3), FIN elective (3), INS 301 (3), MKT elective (3), and one free elective (3).

Senior Year
First semester: 15 credits

MGT 380 (3), two professional electives (6), and two free electives (6).

Senior Year
Second semester: 15 credits

MGT 410 (3), three professional electives (9), and one free elective (3).

Note: One professional elective must be chosen from ECN 338, 344, FIN 452, MGT 453, or MKT 451.

Management

The Department of Management offers a curriculum leading to the Bachelor of Science (B.S.) degree in management. The Master of Business Administration (M.B.A.) degree with an opportunity for specialization in management is described in the *Graduate Bulletin*.

Faculty: Professor Sink, *chairperson*. Professors Coates, Comerford, deLodzia, Laviano, Overton, Schmidt, and Scholl; Associate Professors Beauvais, Cooper, Disney, Dunn, and Hickox; Assistant Professors Dugal and Randall.

This curriculum is intended to provide the student with a background in the conceptual, analytical, and applied aspects of the management of organizations. The areas of study focus on decision making from the perspective of the policy sciences. Courses tend to cluster in the areas of behavioral science, including organizational theory, business law, general business administration and policy, and industrial and labor relations. Courses are carefully integrated to include an overall introduction to business administration, with a number of complementary areas of study in organizational theory and behavior, the management of human resources, industrial and labor relations, personnel administration, general business administration, and business law.

Careers in business, government, hospitals, and other organizations are open to students who have successfully completed the curriculum. These studies also provide a good background for graduate programs in management.

¹ This may be any 300- or 400-level ECN or FIN course except FIN 341.

² Finance electives must be drawn from FIN 401, 411, 420, 425, 431, 433, 441, 452, and 460.

Junior Year*First semester: 15 credits*

MGT 301 (3), MKT 301 (3), OMT 309 (3), one liberal elective (3), and one free elective (3).

Junior Year*Second semester: 15 credits*

FIN 301 (3), MGT 302 (3), 303 (3), one liberal elective (3), and one professional elective (3).

Senior Year*First semester: 15 credits*

BSL 333 (3), MGT 306 (3), 380 (3), and 407 (3), and one free elective (3).

Senior Year*Second semester: 15 credits*

MGT 410 (3), 423 (3), one professional elective (3), one free elective (3), and one liberal elective (3).

Note: One professional elective must be selected from ECN 338, FIN 452, MGT 453, or MKT 451.**Management Science and Information Systems**

The Department of Management Science and Information Systems offers a curriculum leading to the Bachelor of Science (B.S.) degree in management science and information systems. The Master of Business Administration (M.B.A.) degree with an opportunity for specialization in management science and information systems is described in the *Graduate Bulletin*.

Faculty: Professor Ebrahimpour, *chairperson*.

Professors C. Armstrong, Budnick, Humphrey, Jarrett, C. Kim, Kqza, Mangiameli, Mojena, and Narasimhan; Associate Professors Ageloff, S. Chen, and Westin.

The management science and information systems major reflects the advanced technologies used in business and industry today. Graduates earn a B.S. in business administration with an emphasis on computer applications, information management, and data analysis. Graduates will possess competencies and skills in the application of microcomputer software and related tools. They will also understand the value of "information" and the various technologies used to help organizations use information. In addition, graduates

will have a solid grounding in methodologies of data analysis to support business decision making.

Junior Year*First semester: 15 credits*

BSL 333 (3), FIN 301 (3), MIS 306 (3), OMT 309 (3), and one liberal elective (3).

Junior Year*Second semester: 15 credits*MGT 301 (3), MGS 364 (3), MKT 301 (3), major elective (3),³ and one professional elective (3).**Senior Year***First semester: 15 credits*Major electives (6),³ professional electives (6), and one liberal elective (3).**Senior Year***Second semester: 15 credits*MGT 410 (3), one major elective (3),³ one professional elective (3), and two free electives (6).**Marketing**

The Department of Marketing offers a curriculum leading to the Bachelor of Science (B.S.) degree in marketing. Elective courses in the department expose students to career opportunities in advertising, product management, sales management, marketing research, and other facets of marketing management. The Master of Business Administration (M.B.A.) degree with an opportunity for specialization in marketing is described in the *Graduate Bulletin*.

Faculty: Professor Della Bitta, *chairperson*.

Professors N. Dholakia, R. Dholakia, E. Johnson, and Venkatesan; Associate Professor Surprenant; Assistant Professors Harlam, Jain, D. Rosen, and J. Schroeder.

A major focus of marketing is the determination of product and service needs of consumers and industries. Marketing research, information systems, and analysis are used in the development and management of products and services as well as the design and execution of communications, pricing, and distribution channels. Three unspecified but required marketing electives allow the student to plan, in consultation with his or her advisor, an arrangement of courses to meet individual

career objectives. With prior permission of the advisor and chairperson, one marketing elective may be replaced by a course outside the department to enhance career objectives.

Junior Year*First semester: 15 credits*MGT 301 (3), MKT 301 (3), OMT 309 (3), one free elective (3), and one liberal elective (3).⁴**Junior Year***Second semester: 15 credits*

BSL 333 (3), FIN 301 (3), MKT 311 (3), 415 (3), and one free elective (3).

Senior Year*First semester: 15 credits*MKT 409 (3), one MKT elective (3), two professional electives (6), and one liberal elective (3).⁴**Senior Year***Second semester: 15 credits*MGT 410 (3), two MKT electives (6), one professional elective (3), and one liberal elective (3).⁴*Note:* One professional elective must be selected from ECN 338, 344, FIN 452, MGT 453, or MKT 451.

³ Major electives: MIS 307, 483, 485; MGS 370, 445, 450, 470, 475, 491, 492, 493, 495; and OMT 458 and 460.

⁴ One liberal elective is to be selected from the following: APG 203; COM 103, 200, 210, 220; PHL 212; PSY 113; SOC 100, 102, 204; WRT 300 and 333.

COLLEGE OF CONTINUING EDUCATION



Walter A. Crocker, Jr., *Dean*
Gerald R. DeSchepper, *Associate Dean*

The College of Continuing Education offers courses and degree programs designed for adults whose family or work responsibilities have caused an interruption in their formal post-high-school education. Academic programs lead to Bachelor of Science degrees in general business administration; dietetics; food science and nutrition; human development and family studies; industrial and manufacturing engineering; and textiles, fashion merchandising, and design. Bachelor of Arts degrees may be obtained in economics, English, history, and psychology. The Bachelor of General Studies degree offers majors in applied communications, business institutions, health services administration, human studies, and liberal studies. Graduate-level programs include Master of Business Administration, Master of Arts in adult education, Master of Library and Information Studies, Master of Marine Affairs, Master of Public Administration, Master of Science in clinical laboratory science, Master of Science in labor and industrial relations, and advanced and graduate-level courses in computer science,

electrical engineering, and mechanical engineering and applied mechanics through special arrangement with several high-technology firms in the state. For curriculum requirements, refer to the appropriate sections in this bulletin.

Certification programs for various professions as well as individual credit and noncredit Continuing Education Unit (CEU) courses are also offered. In addition, institutes and special courses are planned for business, industry, labor, government, and the professions.

Courses are offered on weekday mornings, afternoons, and evenings, and on Saturdays in the fall, spring, and summer. Students enrolling in a degree program may attend at times most convenient for them. The college also operates community centers in Kingston and Middletown.

Summer Sessions. The College of Continuing Education has administrative responsibility for developing, scheduling, and coordinating all summer offerings of the University of Rhode Island. Day and evening courses are offered in two five-week sessions at Kingston and in Providence. In addition, a number of special programs, including study in foreign countries, are offered at varying dates in the alternate session. Students may attend either or both campuses and enroll in day or evening courses offered in any summer session. Students expecting to apply summer credit to an academic degree program are advised to obtain prior approval from their academic dean before registering. Maximum course load is seven credits per summer session including simultaneous courses in the alternate session. Exceptions are allowed with permission of the student's academic dean.

Bachelor of General Studies

The College of Continuing Education's own degree program, the Bachelor of General Studies (B.G.S.), is a special undergraduate program for adults who have had no formal schooling for at least five years. The B.G.S. program is useful both for students who have never been to college and for those who dropped out of college at some point in the past. For the latter group, B.G.S. offers a creative approach to bringing forward previous educational experience and applying it to this adult degree program. Because there are several ways to meet admission requirements for

the program, the admissions process begins with an interview with a B.G.S. advisor in the Academic Programs Office of the College of Continuing Education.

The B.G.S. program consists of the following six required sections: 1) the Pro-Seminar, 2) General Education requirements, 3) the major curriculum, 4) electives, 5) B.G.S. senior seminars, and 6) senior project.

The Pro-Seminar (4 credits). This required reentry course (BGS 100) introduces adult students to the processes of academic thought and inquiry, builds confidence in their capacity to do college-level work, and helps them identify their scholastic strengths and interests. During the Pro-Seminar, students are given the opportunity to take the College Level Examinations Program (CLEP) General Examinations (for which there is a fee). CLEP credits may be applied toward the General Education requirements.

General Education Requirements (39 credits). Students in the B.G.S. program must meet the University's General Education requirements as explained on page 9 of this bulletin.¹ B.G.S. students may use BGS 390, 391, and 392 to fulfill General Education requirements or may take other approved General Education courses appropriate to their program. Students should consult frequently with B.G.S. advisors.

Major (45 credits). B.G.S. students can choose from the following majors: applied communications, business institutions, health services administration, human studies, and liberal studies. These majors allow students to take courses in several disciplines to meet their educational goals in a nontraditional way. A major may be made up of a carefully prescribed set of courses or it may be flexible in its requirements, allowing students to work creatively with an advisor to design an individualized major that meets both the student's needs and the general goals of the B.G.S. program.

¹ Students majoring in health services administration must take MTH-107 or STA 220 as the mathematics requirement.

APPLIED COMMUNICATIONS MAJOR

Students interested in the broad field of applied communications will be interested in this major. It allows a student, working with an advisor, to design an individual major that must then be approved by the program coordinator.

Communications Core (24 credits). These courses, all at or above the 200 level, must be chosen from communication studies, journalism, and writing (or ENG 205, 305, or 310), with 12 credits from one department and six credits from each of the other two. Prerequisite communications courses are COM 101 and WRT 101.

Methodology Course (3 credits). Students may select either COM 206, HSS 320, PSY 300, or STA 308.

Major Seminar (3 credits). Upon achieving senior status, students must take BGS 398.

Area of Emphasis (15 credits). With the help of an advisor, students select 15 credits that will comprise an area of emphasis, which may be used either to further develop skills in communications or for study in related areas. This area of emphasis must be approved by an advisor and the program coordinator by the beginning of the student's junior year.

BUSINESS INSTITUTIONS MAJOR

This is a fully prescribed major with a specific list of required courses:

- ACC 201 Elementary Accounting I
- ACC 202 Elementary Accounting II
- BSL 333 Legal and Ethical Environment of Business I
- CSC 201 Introduction to Computing I
- ECN 201 Principles of Economics: Microeconomics
- ECN 202 Principles of Economics: Macroeconomics
- FIN 301 Financial Management
- MTH 111 Precalculus
- MTH 131 Basic Calculus I
- STA 308 Introductory Statistics
- MGT 301 Fundamentals of Management
- MKT 301 Marketing Principles
- OMT 309 Operations Management
- WRT 227 Business Communications

In addition to the above required courses, students must elect one liberal elective course offered by a department outside their major. Most courses that fulfill these major requirements are available in Providence in the evening. With careful

planning, however, it is possible for students to complete approximately two-thirds of the program's requirements in evening courses at the Kingston Campus.

HEALTH SERVICES ADMINISTRATION MAJOR

Like the major in business institutions, the major in health services administration has prescribed courses. These fall into three parts:

Core (12 credits)

- NUR 100 Health, Illness, Nursing, and the Ecosystem
- HDF 357 Family and Community Health
- HSS 320 Introduction to Research in Human Science and Services
- CSC 101 Computing Concepts

Administration (15 credits)

- ACC 201 Elementary Accounting I
- ACC 202 Elementary Accounting II
- ECN 201 Principles of Economics: Microeconomics
- ECN 202 Principles of Economics: Macroeconomics
- PHL 314 Ethical Problems in Society and Medicine

Experiential Seminars (15 credits)

- HSA360 Health Services Administration
- HSA 380 Introductory Practicum in Health Services Administration
- HSA 480 Advanced Practicum in Health Services Administration

Professional Elective (3 credits)**HUMAN STUDIES MAJOR**

Students interested in the wide range of human studies or human services will be attracted to this major. It permits the student, working with an advisor, to design a major that will meet both personal and career goals. All human studies majors must have their program design approved in advance by an academic advisor and the program coordinator. It must include the following four parts:

Social Science Core (24 credits). Students are required to select 24 credits from three of the following social science departments in the College of Arts and Sciences: Economics, History, Marine Affairs, Political Science, Psychology, and Sociology and Anthropology. These departments determine which of their courses are suitable for the B.G.S. major.

The 24 credits must be distributed as follows: four courses from one department, two courses from a second department, and two courses from a third department. Only two prerequisite or introductory-level courses are allowed in the major. Students should meet with an advisor for more information regarding these courses.

Methodology Course (3 credits). Students are strongly advised to fulfill this requirement by taking HSS 320. This course is offered in Providence during the spring semester only and is usually offered only every second year. Students are advised to plan accordingly. In exceptional cases students may be allowed to meet the methods requirement by taking one of the following courses: HIS 395, PSY 300, SOC 301, or STA 220.

Major Seminar (3 credits, BGS 397). Students will take this course near the end of their degree program. It will give them an opportunity to review and evaluate the skills and knowledge they have acquired through their major. It is offered only in the fall semester and in alternate years.

Area of Emphasis (15 credits). The area of emphasis provides the student with an opportunity to select a group of courses that focus on a particular problem or population of interest. Once a particular focus is identified, students select 15 credits from the following list. All 15 credits must be at or above the 300 level.

African and Afro-American Studies	Human Science and Services
Business Law ²	Journalism
Communication Studies	Languages (Portuguese, Spanish, French)
Community Planning	Management ²
Computer Science	Marine Affairs
Consumer Affairs ²	Marketing ²
Economics	Nursing ²
Education ²	Political Science
Food Science and Nutrition ²	Psychology
Health ²	Sociology and Anthropology
History	Urban Affairs
Human Development and Family Studies	Women's Studies

² In these departments, only certain courses are appropriate for the human studies major. See an advisor for details.

LIBERAL STUDIES MAJOR

The new major in liberal studies responds to the needs of many adult students who want a bachelor's degree but not in a specific field, find existing degree programs too confining, and have the maturity to work with an advisor to select courses that introduce them broadly to an interdisciplinary field of study.

Competence in a foreign language through the 102 level is a requirement of this major; all other General Education requirements for the program are identical to those of the other B.G.S. majors. Students who are competent in a second language may test out of the language requirement and then choose other courses to replace language courses.

Courses for the major are to be selected from each of four areas, as listed below. Students must select a maximum of 18 credits and a minimum of 6 in each area, for a total of 45 credits.

The Classical Tradition (Until 1789). The study of ideas, philosophy, and art that form the basis of Western thought and continue to influence its development. Courses may be selected from art history, classics, English, history, and philosophy.

Modern Culture and Thought (Nineteenth and Twentieth Centuries). Modern trends and developments in the history, literature, art, and philosophy of contemporary Western societies. Courses may be selected from art history, English, history, music, philosophy, political science, and Russian literature and history.

The Cultural and Behavioral Environment. The study of customs and the economic and geographical factors affecting contemporary society. Courses may be selected from anthropology, economics, geology, history, and religious studies.

Cross-Cultural Communication. Learning and writing about different cultures in either English or another language. Study abroad is strongly encouraged, and credit is granted according to current policy. Courses may be selected from French, German, Italian, journalism, Spanish, speech, and writing. Students choosing a foreign language to fulfill the requirements in this area would already have taken two courses (most commonly, 101 and 102) in the language of their choice, so they would begin to fulfill this requirement with 103.

Electives (27 credits). The electives permit students to complete the B.G.S. degree in a number of creative ways, either through carefully designed work experience internships, or through previous but relevant educational experience, or both. Up to 15 credits may be taken in the University Year for Action program, or students may choose to take courses to fulfill this requirement. BGS 390, 391, and 392 may be counted as electives if they are not used to fulfill General Education requirements.

B.G.S. Senior Seminars. After completing at least 60 credits, a student may begin to take the sequence of three required six-credit senior seminars (BGS 390, 391, 392). The senior seminars may be applied either to the General Education requirement or to the elective requirement of the B.G.S. program.

Senior Project (3 credits). All B.G.S. students must complete the BGS 399 Senior Project or a departmentally directed study. Students are required to meet with a B.G.S. advisor to plan a project proposal. This written proposal must meet with the approval of both an appropriate faculty advisor and the B.G.S. coordinator before the student can register for BGS 399.

A total of 118 credits is required for the Bachelor of General Studies degree.

Fees and Finances

Charges and fees set forth in this listing are subject to change without notice. All charges are payable by the semester and are due at the time of registration. Checks or money orders should be made payable to the University of Rhode Island. For financial assistance, refer to "Financial Aid" in this section.

Tuition and Fees. Rhode Island resident undergraduates pay \$125 per credit. Out-of-state undergraduates pay \$430 per credit. Rhode Island graduate students pay \$175 per credit. Out-of-state graduate students pay \$430 per credit. There is also a \$20 registration fee and a \$10 student activity fee payable once each term. The student activity fee supports a student government, career services, and various lectures and cultural events determined by an activities board of elected CCE students. Other fees may apply.

Refund Policy. If a course is officially dropped before the first class meeting, a full refund of tuition will be authorized.

After classes have begun, the following refund schedule applies:

<i>Fall and Spring Semesters</i>	<i>Refund</i>
Before first class	100%
Until the close of the add period	80%
After the add period	No refund
<i>Summer Session</i>	<i>Refund</i>
Before first class	100%
Until the close of the add period	70%
After the add period	No refund

The student activity fee is refundable according to the refund schedule. The registration fee is not refundable except when a course is cancelled or closed by the University. There is no charge for adding a course to replace one dropped or cancelled.

Financial Aid. Only matriculated students enrolled on at least a half-time basis (six credits) may be considered for an award. The Student Financial Aid Office determines eligibility for all grants, loans, and employment, which are awarded on an academic-year basis. Financial aid will be awarded only after a student has applied for a Pell Grant and has submitted a Pell Student Eligibility Report to the Student Financial Aid Office. For more detailed information, contact a peer counselor.

Services for Students

The College of Continuing Education provides a number of services for students in Providence and the community centers. Among these are free academic advising, peer counseling, health education, campus ministry, and, at minimal cost, a testing service. Advisors are available to answer questions about registration, admissions, degree programs, and the College Level Examination Program. The peer counseling service provides students with the opportunity to meet with other adult students who have been trained to help them with problem solving, including issues of minority groups and of the handicapped. In testing services, a staff of certified psychologists administers a number of psychological tests and evaluations to individuals and groups to help them make personal or career decisions.

The college also has at its Providence location a bookstore and library, plus a comfortable student center where students and faculty can meet, talk, and relax.

Registration and Admission

Enrollment in University courses offered by the College of Continuing Education is accomplished by completing a registration form prior to the beginning of each semester. Being enrolled in a course is not the same as being admitted to the University. To apply for admission to an undergraduate degree program a student must follow the application procedure stated below. However, credits earned through successful completion of courses may eventually be applied toward a degree program after a student is accepted as a degree candidate.

Beginning students who have been away from school for some time and have little or no course work beyond high school are encouraged to register in the special entry course: BGS 100, the Pro-Seminar.

Any adult may enroll as a nonmatriculated student in the College of Continuing Education. All courses at the University are open to nonmatriculated students; however, day courses at the Kingston Campus are open only on a space-available basis.

All information and forms necessary for registration are included in the semester course list printed two to three weeks before each term begins. The lists, containing up-to-date course offerings and fees, are available during the registration periods, or they may be obtained through written or telephone request.

Application Procedures. A student wishing to enroll in an undergraduate degree program in the College of Continuing Education does so through the Academic Services Office. An initial interview is recommended so that program options may be explored as well as the student's capabilities. A student then files an Application for an Undergraduate Degree and provides the Academic Services Office with official transcripts.

Students admitted to undergraduate degree programs should consult with the appropriate faculty coordinator concerning their major. A work sheet of courses is prepared and maintained as a checklist toward graduation requirements. It is the strict responsibility of the student to file an Intent to Graduate form with the Academic Services Office three semesters in advance of the contemplated date.

COLLEGE OF ENGINEERING



Thomas J. Kim, *Dean*
Harold N. Knickle, *Associate Dean*
Richard M. Vandeputte, *Academic Advisor*

The College of Engineering offers undergraduate majors in chemical, chemical and ocean, civil, computer, electrical, industrial, materials, mechanical, and ocean engineering. In addition, an ocean option is available in mechanical engineering. Because the same fundamental concepts underlie all branches of engineering, the freshman-year courses are quite similar for all curriculums, and the choice of a specific branch of engineering may be delayed until the beginning of either the second term or the second year of study. Students electing one of the programs that include ocean options follow the curriculums for chemical or mechanical engineering for two or three years and enroll in many ocean engineering courses in the junior and senior year.

All of the engineering curriculums are based on an intense study of mathematics, the basic sciences, and the engineering sciences common to all branches of the profession. On this base is built the in-depth study of the important principles and con-

cepts of each separate discipline. These principles are applied to the understanding and solution of problems of current interest and importance in the field. Each curriculum is designed to provide the knowledge and ability necessary for practice as a professional engineer, or for successful graduate study, which may include law, business administration, or medicine as well as the normal engineering and science disciplines.

The goal of the college is to stimulate the students to become creative, responsible engineers, aware of the social implications of their work, and flexible enough to adjust to the rapid changes taking place in all branches of engineering. Engineers from all fields are heavily involved in the solution of technological and sociotechnological problems. The needs of industry are for balanced teams of both men and women from the different engineering areas.

Entering students who have chosen a specific major should follow the particular program listed below. Those who have decided to major in engineering but have not selected a specific program should select courses in general chemistry; General Education requirements; MTH 141, 142; MCE 162 and/or CHM 101 and 102.

Students who are undecided about engineering but who wish to keep it open as an option should take note that MTH 141 and 142; MCE 162 and/or PHY 213 and 285; and a course in chemistry are required for graduation from the College of Engineering, and are prerequisites for many engineering courses. They must be taken before transferring from University College to the College of Engineering.

To transfer from University College to the College of Engineering, students must not only have completed 24 credits with a quality point average of 2.00 or better, they must also have completed all of the required mathematics, science, and engineering courses of the freshman year with a quality point average of 2.00 or better.

To meet graduation requirements, students enrolled in the College of Engineering must satisfactorily complete all courses of the curriculum in which they are registered and must obtain a quality point average of 2.00 or better in all required science, mathematics, and engineering courses (including professional electives).

International Engineering Program. The College of Engineering also offers a five-year International Engineering Program (IEP) in which students earn two degrees: a Bachelor of Science in engineering and a Bachelor of Arts in a foreign language. The foreign languages currently available as part of the IEP are German and French. In addition to their engineering courses, students study the foreign language, business, and culture. They spend six months abroad in a professional internship in Austria, France, Germany, or Switzerland. Upon graduation, students are well prepared to compete in the global marketplace.

To enroll, a student simply registers for the appropriate language course for engineering students, and follows the recommended outline of courses. In 1992, the IEP was selected as the recipient of the Award for Educational Innovation by ABET, the national Accreditation Board for Engineering and Technology.

Engineering and M.B.A. Program. This five-year program offers students the opportunity to earn a Bachelor of Science in engineering and a Master of Business Administration. Students who have a 3.00 or better grade point average may enroll during their senior year with successful completion of the Graduate Management Admissions Test.

General Education Requirements. Engineering students must meet the University's General Education requirements listed on page 9 of this bulletin, except that only three credits are required in the foreign language or culture component. In these courses, students are exposed to and challenged by concepts from the humanities and social sciences to ensure that the social relevance of their engineering activities will never be forgotten. In selecting courses to satisfy these requirements, students should consult with their advisors to be certain that they have chosen courses that satisfy both the University requirements and the requirements of the Accreditation Board for Engineering and Technology. The requirements in mathematics and natural sciences are satisfied by required courses in the engineering curriculums. Three credits must be taken in the Foreign Language or Culture group, and six credits each in English Communication, Fine Arts and Literature, Letters, and Social Sciences. In two of the latter three groups, both courses must be taken

in the same department. The second course may not be at the 100 level, unless it has the first course as a prerequisite or is an obvious continuation of the first.

Freshman Year. All engineering curriculums have similar programs during the freshman year. This provides some degree of flexibility to those students who are uncertain about their choice of curriculum. Except for majors in chemical engineering, chemical and ocean engineering, computer engineering, and materials engineering, all engineering students take the following 17 credits in the first semester.¹

- 3 CHM 101 General Chemistry Lecture I
- 1 CHM 102 Laboratory for Chemistry 101
- 4 MTH 141 Introductory Calculus with Analytic Geometry
- 3 ECN 201 Principles of Economics: Microeconomics
- 3 CSC 201 Introduction to Computing I or General Education requirement
- 3 General Education requirement

Students who are still undecided about their choice of major after completing the first semester should review their choice of courses for the second semester with their advisor to be certain that they meet the prerequisites for the sophomore year.

Accreditation. The curriculums in chemical, civil, computer, electrical, industrial, and mechanical engineering are currently accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET).

Biomedical Electronics Engineering

The undergraduate program in biomedical electronics engineering was suspended, effective June 1984. No new students are being accepted into the program.

The Bachelor of Science (B.S.) degree in biomedical electronics engineering is offered by the Department of Electrical Engineering.

Biomedical engineers design medical instruments such as electrocardiographs, electroencephalographs, blood analyzers, and X-ray machines for diagnosis of disease and equipment such as radiotherapy machines, pacemakers, and lasers for surgery, and develop artificial organs for prosthesis. They design computer systems to help physicians monitor critically ill

patients, to correlate a multitude of disease symptoms in order to diagnose a disease, and to determine the best course of treatment.

Biomedical engineers are employed in: 1) the medical instrument industry, where they design, manufacture, sell, and service medical equipment; 2) hospitals, which employ engineers in increasing numbers to select, evaluate, and maintain complex medical equipment and to train the hospital staff in their use; and 3) medical and biological research centers, which use the specialized training of the biomedical engineer to apply engineering techniques in research projects.

The biomedical electronics engineering program combines study in the biological sciences with those areas of engineering that are particularly important for the application of modern technology to medicine. With a few minor elective changes the program also satisfies the entrance requirements of most medical schools, but students who plan to go on to medical school should consult the premedical advisor and the coordinator of the biomedical electronics engineering program.

For transfer from University College to the College of Engineering in the biomedical electronics engineering program, students must have completed *all science, mathematics, and engineering courses required during the first two semesters* with a quality point average of 2.00 or better.

The major requires 139 credits.

Freshman Year

First semester: 17 credits

- 3 CHM 101 General Chemistry Lecture I
- 1 CHM 102 Laboratory for Chemistry 101
- 4 MTH 141 Introductory Calculus with Analytic Geometry
- 3 ECN 201 Principles of Economics: Microeconomics
- 3 CSC 201 Introduction to Computing I
- 3 General Education requirement

Freshman Year

Second semester: 19 credits

- 4 CHM 124 Introduction to Organic Chemistry
- 4 MTH 142 Intermediate Calculus with Analytic Geometry
- 3 PHY 213 Elementary Physics I

¹ In addition, students in the civil and industrial engineering programs take EGR 102 (one credit) in the first semester.

- 1 PHY 285 Physics Laboratory
- 4 ZOO 111 General Zoology
- 3 General Education requirement

*Sophomore Year**First semester: 16 credits*

- 3 ELE 211 Linear Systems and Circuit Theory I
- 3 ELE 210 Introduction to Electricity and Magnetism
- 1 ELE 214 Circuits Laboratory I
- 3 MTH 243 Calculus for Functions of Several Variables
- 3 ZOO 345 Basic Animal Physiology
- 3 General Education requirement

*Sophomore Year**Second semester: 19 credits*

- 3 ELE 205 Microprocessor Laboratory
- 3 ELE 212 Linear Systems and Circuit Theory II
- 1 ELE 215 Circuits Laboratory II
- 3 MCE 263 Dynamics
- 3 MTH 362 Advanced Engineering Mathematics I
- 3 PHY 223 Introduction to Acoustics and Optics
- 3 General Education requirement

*Junior Year**First semester: 18 credits*

- 3 ELE 313 Linear Systems
- 3 ELE 322 Electromagnetic Fields I
- 3 MTH 363 Advanced Engineering Mathematics II
- 3 PHY 341 Introductory Modern Physics
- 6 General Education requirements

*Junior Year**Second semester: 16 credits*

- 3 ELE 314 Linear Systems and Signals
- 3 ELE 323 Electromagnetic Fields II
- 4 ELE 342 Electronics I
- 3 PHY 420 Introduction to Thermodynamics and Statistical Mechanics (preferred) or MCE 341 Fundamentals of Thermodynamics
- 3 General Education requirement

*Senior Year**First semester: 18 credits*

- 5 ELE 443 Electronics II
- 3 ELE 588 Biomedical Engineering I
- 1 ELE 481 Biomedical Engineering Seminar I
- 3 General Education requirement
- 3 Math elective
- 3 Professional elective

*Senior Year**Second semester: 16 credits*

- 3 ELE 589 Biomedical Engineering II
- 1 ELE 482 Biomedical Engineering Seminar II
- 3 ZOO 442 Mammalian Physiology
- 6 Professional electives²
- 3 Free elective

Chemical Engineering

The Department of Chemical Engineering offers a curriculum leading to the Bachelor of Science (B.S.) degree in chemical engineering that is accredited by ABET.³ A curriculum leading to the Bachelor of Science degree in chemical and ocean engineering (unaccredited) is offered in cooperation with the Department of Ocean Engineering. The Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees, also offered by the department, are described in the *Graduate Bulletin*.

Faculty: Professor S. Barnett, *chairperson*. Professors Bose, R. Brown, Estrin, Gregory, Knickle, Rockett, and Rose; Associate Professor Gray; Assistant Professor Rivero-Hudec.

The chemical engineer is concerned with the application and control of processes leading to changes in composition. These processes are most frequently associated with the production of useful products (chemicals, fuels, metals, foods, pharmaceuticals, paper, plastics, and the like), but also include such seemingly unrelated matters as removal of toxic components from the blood by an artificial kidney, environmental cleanup, and semiconductor processing. The chemical engineer's domain includes more efficient production and use of energy, processing of wastes, and protection of the environment.

Chemical engineers have a strong foundation in chemistry, physics, mathematics, and basic engineering. Chemical engineering courses include the use of digital computers, thermodynamics, transport phenomena, mass transfer operations, metallurgy, materials engineering, process dynamics and control, kinetics, and plant design. The student has the opportunity to operate small-scale equipment to determine efficiencies and operating characteristics, and to visit local industry. Intensive work in the solution of complex problems is given in which economics and optimization of engineering design are emphasized.

A chemical engineer with a background in both chemistry and engineering can apply his knowledge of research and development, design, production, and manufacturing not only to the areas listed above, but to many others such as textiles, dyes, petroleum, ceramics, paint, and rubber, as well as to biomedical, biochemical, ocean, space, nuclear energy, and environmental problems and processes.

About 25 percent of graduates work with environmental agencies. Many are employed by the Center for Pollution Prevention as undergraduates.

The major requires 133 credits.

*Freshman Year**First semester: 16 credits*

- 5 CHM 191 General Chemistry⁴
- 1 CHE 101 Foundations of Chemical Engineering
- 4 MTH 141 Introductory Calculus with Analytic Geometry
- 6 General Education requirements⁵

*Freshman Year**Second semester: 17 credits*

- 5 CHM 192 General Chemistry⁴
- 1 CHE 102 Introduction to Chemical Engineering
- 4 MTH 142 Intermediate Calculus with Analytic Geometry
- 3 PHY 213 Elementary Physics I
- 1 PHY 285 Physics Laboratory
- 3 ECN 201 Principles of Economics: Microeconomics

*Sophomore Year**First semester: 17 credits*

- 3 CHE 212 Chemical Process Calculations
- 4 CHM 291 Organic Chemistry
- 3 MTH 243 Calculus for Functions of Several Variables
- 3 PHY 214 Elementary Physics II
- 1 PHY 286 Physics Laboratory
- 3 General Education requirements⁵

*Sophomore Year**Second semester: 16 credits*

- 3 CHE 272 Introduction to Chemical Engineering
- 3 CHE 332 Physical Metallurgy or approved professional elective
- 4 CHM 292 Organic Chemistry
- 3 ELE 220 Passive and Active Circuits
- 3 MTH 244 Differential Equations

Junior Year*First semester: 17 credits*

- 3 CHE 313 Chemical Engineering Thermodynamics
- 3 CHE 347 Transfer Operations I
- 3 CHM 431 Physical Chemistry
- 2 CHM 335 Physical Chemistry Laboratory
- 3 Approved mathematics elective
- 3 General Education requirement⁵

Junior Year*Second semester: 17 credits*

- 3 CHE 314 Chemical Engineering Thermodynamics
- 2 CHE 322 Chemical Engineering Microlaboratory
- 3 CHE 348 Transfer Operations II
- 3 CHE 425 Process Dynamics and Control
- 3 CHM 432 Physical Chemistry
- 3 General Education requirement⁵

Senior Year*First semester: 17 credits*

- 1 CHE 328 Industrial Plants
- 2 CHE 345 Chemical Engineering Laboratory
- 2 CHE 349 Transfer Operations III
- 3 CHE 351 Plant Design and Economics
- 3 CHE 464 Industrial Reaction Kinetics
- 3 PHY 341 Introductory Modern Physics or approved professional elective
- 3 General Education requirement⁵

Senior Year*Second semester: 17 credits*

- 2 CHE 346 Chemical Engineering Laboratory
- 3 CHE 352 Plant Design and Economics
- 3 Approved professional elective
- 3 CVE 220 Mechanics of Materials or approved professional elective
- 6 General Education requirements⁵

Chemical and Ocean Engineering. Students enrolled in this curriculum will follow the program of study for chemical engineering during the freshman, sophomore, and junior years. The senior year curriculum follows.

The major requires 135 credits.

Senior Year*First semester: 18 credits*

- 1 CHE 328 Industrial Plants
- 2 CHE 349 Transfer Operations III
- 3 CHE 351 Plant Design and Economics
- 3 CHE 403 Introduction to Ocean Engineering Processes I
- 3 CHE 464 Industrial Reaction Kinetics
- 3 OCE 410 Basic Ocean Measurements
- 3 General Education requirement⁵

Senior Year*Second semester: 18 credits*

- 3 CHE 352 Plant Design and Economics
- 3 CHE 404 Introduction to Ocean Engineering Processes II
- 3 CHE 534 Corrosion and Corrosion Control
- 3 OCG 401 General Oceanography
- 6 General Education requirements⁵

Civil and Environmental Engineering

The Department of Civil and Environmental Engineering offers a curriculum leading to the Bachelor of Science (B.S.) degree in civil engineering. The Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees, also offered by the department, are described in the *Graduate Bulletin*.

The Bachelor of Science program in civil engineering is accredited by the Accreditation Board for Engineering and Technology.

Faculty: Professor Urish, *chairperson*. Professors Kovacs, K. Lee, McEwen, Poon, Silva, and R. Wright; Associate Professors Karamanlidis, Marcus, Thiem, Tsiatas, and Veyera; Adjunct Professor T. Wright; Adjunct Associate Professors Huston and Shaw; Adjunct Assistant Professors Alkhatib, Badorek, and Mogawer.

Civil engineers are responsible for researching, developing, planning, designing, constructing, and managing many of the complex systems and facilities essential to our modern civilization. These include: water supply and pollution control systems; all types of transportation systems from pipelines to city streets; and structural systems from residential buildings to city skyscrapers, power plants, and offshore platforms. Civil and environmental engineers play important roles in planning and administration with government

agencies at all levels, especially those dealing with public works, transportation, environmental control, water supply, and energy.

The curriculum provides the students with sufficient background to pursue graduate study or to enter directly into professional practice in industry or government after graduation. The first two years are devoted largely to courses in mathematics, chemistry, physics, and engineering science common to all engineering curriculums. In their last two years, students have a large degree of flexibility in developing their own programs to meet their own professional goals through the selection of professional electives in environmental engineering, soil mechanics and foundations, structural engineering, and transportation and construction.

No later than the first midsemester of the junior year each student is required to file a proposed plan of study which has been approved by the faculty advisor and the department. Professional electives and General Education requirements must be selected in consultation with the advisor to satisfy the Accreditation Board for Engineering and Technology accreditation requirements.

The major requires 133 credits.

² Select from approved list (see advisor). Professional electives approved for this program include: first semester—BCP 311, 403, 435; CHM 335, 431; CSC 311; ELE 331, 457, 581; MCE 354; MTH 244, 471; ZOO 441; second semester—BCP 302; CHM 336, 432; CSC 311, 400; ELE 436, 444, 458, 484, 581; MCE 354; MTH 244, 472.

³ Accreditation Board for Engineering and Technology through its Engineering Accreditation Commission in cooperation with the Committee on Education and Accreditation of the American Institute of Chemical Engineers.

⁴ For CHM 191 and 192 (10 credits), students may substitute CHM 101, 102, 112, 114, and 212 (12 credits).

⁵ In order to meet accreditation requirements, these courses, together with at least 18 credits of the General Education requirements, must be chosen from a group approved by the chairperson, with the approval of an advisor designated by the chairperson.

*Freshman Year**First semester: 18 credits*

- 3 CHM 101 General Chemistry Lecture I
- 1 CHM 102 Laboratory for Chemistry 101
- 1 EGR 102 Basic Graphics
- 4 MTH 141 Introductory Calculus with Analytic Geometry
- 3 CSC 200 Introduction to Computer Programming for Engineers
- 3 ECN 201 Principles of Economics: Microeconomics
- 3 General Education requirement

*Freshman Year**Second semester: 18 credits*

- 4 MTH 142 Intermediate Calculus with Analytic Geometry
- 3 MCE 162 Statics
- 3 PHY 213 Elementary Physics I
- 1 PHY 285 Physics Laboratory
- 4 GEL 103 Physical Geology
- 3 General Education requirement

*Sophomore Year**First semester: 16 credits*

- 3 MTH 243 Calculus for Functions of Several Variables
- 3 MCE 263 Dynamics
- 3 PHY 214 Elementary Physics II
- 1 PHY 286 Physics Laboratory
- 3 CVE 216 Introduction to Civil and Environmental Engineering Systems
- 3 General Education requirement

*Sophomore Year**Second semester: 15 credits*

- 3 MTH 244 Differential Equations
- 3 CVE 220 Mechanics of Materials
- 3 ELE 220 Passive and Active Circuits
- 3 General Education requirement
- 3 Approved statistics elective

*Junior Year**First semester: 17-18 credits*

- 2 CVE 322 Civil Engineering Laboratory⁶ or
- 3 General Education requirement
- 3 MCE 354 Fluid Mechanics
- 3 CVE 352 Structural Analysis I
- 4 CVE 374 Environmental Engineering
- 4 CVE 381 Geotechnical Engineering
- 1 CVE 397 Introduction to Civil Engineering Design

*Junior Year**Second semester: 16-17 credits*

- 2 CVE 322 Civil Engineering Laboratory⁶ or
- 3 General Education requirement
- 4 CVE 347 Highway Engineering
- 3 CVE 353 Structural Analysis II
- 4 CVE 370 Hydraulic Engineering
- 3 General Education requirement

*Senior Year**First semester: 17 credits*

- 3 General Education requirement
- 3 CVE 465 Analysis and Design of Concrete Structures
- 9 Professional electives
- 2 CVE 497 Civil Engineering Design

*Senior Year**Second semester: 15 credits*

- 3 CVE 498 Civil Engineering Design
- 3 Professional elective
- 3 Free elective
- 3 General Education requirement
- 3 Approved science elective⁷

Professional Electives. Twelve of the 15 credits required for professional electives must be in the Department of Civil and Environmental Engineering and must include at least eight design credits. A list of courses and their design credits is available from the Department of Civil and Environmental Engineering.

Computer Engineering

The Bachelor of Science (B.S.) degree in computer engineering is offered by the Department of Electrical and Computer Engineering. Specialization in computer engineering is also available within the Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) programs in electrical engineering, described in the *Graduate Bulletin*.

Coordinator: Professor Cooley (Electrical and Computer Engineering). Associate Professors Sun and Q. Yang; Assistant Professors Lo and Uht.

The Department of Electrical and Computer Engineering will no longer admit students into its sophomore courses who have not been formally admitted into electrical engineering or computer engineering.

Computers and computer-like devices have transformed society, particularly in the technologically advanced countries. Computers are usually associated with data processing and high-technology control and signal-processing functions such as numerically controlled machine tooling, computer-aided machine design, tomography and medical imaging, speech analysis and synthesis, and picture and data communication. Both mini- and microcomputers now play an important role in our everyday work and play environment. Word processing, paperless offices, and microprocessor-controlled games are prominent examples.

Computer engineering is concerned with the design and efficient use of large or small computers and the development of other machines and instruments that contain computers, or parts of computers, as essential building blocks, from the hand-held calculator to the large, multi-terminal computer and the programmable assembly machine. A programmable machine is one that will change its operation in response to a program or command.

Computer engineers may be employed in the design, service, operation, and sale of computer systems as well as the design, service, and sale of complex machinery, instruments, and systems—such as an automated subway—that require computers as essential parts. The employers may be industrial organizations, transportation companies, federal laboratories, or local government.

•The computer engineer must understand the fundamentals of computer logic and programming as well as the fundamentals of electronics and general engineering—mathematics, mechanics, electricity and magnetism, and heat transfer. Engineers use all of this knowledge to create new devices and systems that satisfy perceived human needs.

To transfer from University College to the College of Engineering in the computer engineering program, students must have completed *all science, mathematics, and engineering courses required during the first two semesters* with a quality point average of 2.00 or better.

The major requires 136 credits.

Freshman Year*First semester: 16 credits*

- 4 CSC 211 Introduction to Computer Science I
- 3 CHM 101 General Chemistry Lecture I
- 1 CHM 102 Laboratory for Chemistry 101
- 4 MTH 141 Introductory Calculus with Analytic Geometry
- 3 PHY 203 Elementary Physics I
- 1 PHY 273 Elementary Physics Laboratory I

Freshman Year*Second semester: 18 credits*

- 3 PHY 204 Elementary Physics II
- 1 PHY 274 Elementary Physics Laboratory II
- 4 MTH 142 Intermediate Calculus with Analytic Geometry
- 4 CSC 212 Introduction to Computer Science II
- 3 ECN 201 Principles of Economics: Microeconomics
- 3 General Education requirement

Sophomore Year*First semester: 17 credits*

- 3 ELE 201 Digital Circuit Design
- 1 ELE 202 Digital Circuit Design Laboratory
- 3 PHY 205 Elementary Physics III
- 1 PHY 275 Elementary Physics Laboratory III
- 3 MTH 243 Calculus for Functions of Several Variables
- 3 CSC 205 Computational Methods for Engineers and Scientists
- 3 General Education requirement

Sophomore Year*Second semester: 17 credits*

- 3 ELE 205 Microprocessor Laboratory
- 3 ELE 212 Linear Circuit Theory
- 2 ELE 215 Linear Circuits Laboratory
- 3 MTH 362 Advanced Engineering Mathematics I
- 3 PHY 306 Elementary Modern Physics
- 3 CSC 311 Machine and Assembly Language Programming

Junior Year*First semester: 18 credits*

- 3 ELE 331 Introduction to Solid State Devices
- 3 CSC 411 Computer Organization
- 3 MTH/CSC 447 Discrete Mathematical Structures
- 3 Engineering elective⁸
- 6 General Education requirements

Junior Year*Second semester: 16 credits*

- 4 ELE 342 Electronics I
- 3 ELE 405 Digital Computer Design
- 3 CSC 301 Fundamentals of Programming Languages
- 6 General Education requirements

Senior Year*First semester: 17 credits*

- 3 CSC 331 Data Structures
- 3 ELE 408 Computer Organization Laboratory
- 4 ELE 447 VLSI Design and Simulation
- 3 IME 411 Probability for Engineers or MTH 451 Introduction to Probability and Statistics
- 3 General Education requirement

Senior Year*Second semester: 17 credits*

- 3 CSC 412 Operating Systems
- 3 ELE 437 Computer Communications
- 4 ELE 444 Advanced Electronics Design
- 3 General Education requirement
- 3 Free elective
- 1 ELE 400 Introduction to Professional Practice

Minimum Requirements

Humanities and Social Sciences (27 credits): see the General Education requirements for the College of Engineering, listed on page 61. Students should consult their advisors regarding distribution of courses and approved credits.

Mathematics (17 credits): MTH 141, 142, 243, 362, 447.

Basic Sciences (19 credits): CHM 101, 102; PHY 203, 273, 204, 274, 205, 275, 306.

Computer Science (24 credits): CSC 205; 211, 212, 301, 311, 331, 411, 412.

Engineering Sciences and Design (42 credits): ELE 201, 202, 205, 212, 215, 331, 342, 405, 408, 437, 444, 447; IME 411 or MTH 451; engineering elective.⁸

Electrical Engineering

The Department of Electrical and Computer Engineering offers a curriculum leading to the Bachelor of Science (B.S.) degree. The Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees offered by the department are described in the *Graduate Bulletin*.

Faculty: Professor Ohley, *chairperson*. Professors Boudreaux-Bartels, Daly, L. Jackson, Kay, Kumaresan, Lengyel, Lindgren, Mardix, Mitra, Sadasiv, Spence, Sunak, Tufts, and Vaccaro; Associate Professors Fischer, Lo, Sun, Swaszek, and Q. Yang; Adjunct Professors Aaron, Banerjee, Gerwitz, Middleton, Turtle, and Uht.

Electrical engineers work in all areas in which electrical phenomena are involved. These areas include communication systems, computers, control systems, quantum electronics, microelectronics, electro-optics, electro-acoustics, energy conversion, antennas and radio propagation, design of electronic devices, and bio-engineering.

Since electrical instrumentation is at the heart of modern science and technology, electrical engineers are not only employed in the computer, electronics, communications, and power industries, but may also be found in diverse enterprises such as transportation, the chemical industry, large hospitals, medical schools, and government laboratories. By carefully selecting elective courses, the student should be able to enter any of these fields after graduation or be prepared for graduate study in engineering or physics.

The curriculum emphasizes the scientific basis of electrical engineering and the application of mathematical analysis to engineering problems. Work is required in network and systems theory, atomic physics and solid state, electromagnetic theory, and electronics. Creative use of scientific principles in problems of engineering design is stressed, particularly in the senior

⁶ Students can take the lab in either the fall or spring semester.

⁷ Any course for which the prerequisite is met by CHM 101, GEL 103, or PHY 214, or any course in biochemistry and biophysics, biology, botany, microbiology, or zoology. Course must be approved by an advisor.

⁸ An engineering elective for this curriculum is one of the following engineering science courses: CHE 332, 437; CVE 220; IME 404, 412; MCE 323, 341, 354; OCE 410.

year. Computer hardware and software development is a part of many electrical engineering courses.

Extensive laboratory work with electrical and optical devices serves to bridge the gap between mathematical analysis and the real world of "hardware." Separate undergraduate laboratories are available for electrical measurements, electronics, pulse and digital circuits, microprocessors, computer graphics, microwaves and quantum electronics, optics, materials, energy conversion, and systems. Selected students participate in advanced projects, including microelectronics, investigation of optical properties of solids, optical and radio propagation, acoustics, computers, robotics, and biological instrumentation.

Electrical engineering students should note that the four-year electrical engineering curriculum allows for three credits of completely free electives that do not have to satisfy any of the General Education requirements. Although the natural science requirement will be satisfied automatically by courses specified in the electrical engineering curriculum, it is recommended that students take some additional courses in mathematics or physics for which the prerequisites have been satisfied.

To transfer from University College to the College of Engineering in the electrical engineering program, students must have completed *all science, mathematics, and engineering courses required during the first two semesters* with a quality point average of 2.00 or better.

Minimum Requirements

Humanities and Social Sciences (27 credits): see the General Education requirements for the College of Engineering, listed on page 61. Students should consult with their advisors regarding distribution of credits and approved courses.

Mathematics (20 credits): MTH 141, 142, 243, 362, 363; three credits MTH elective (215, any 300- to 500-level course except MTH 381).

Basic Sciences (19 credits): CHM 101, 102; PHY 203, 273, 204, 274, 205, 275, 306.

Computer Science (6 credits): CSC 201, 205.

Engineering Sciences and Design (56-57 credits): ELE 201, 202, 205, 212, 215, 313, 314, 322, 323, 331, 342, 443; one engineering elective (chosen from CHE 332, 347, 437; CVE 220; IME 404, 411, 412; MCE 323,

354, 458; and OCE 410); four electrical engineering design electives (chosen from ELE 401, 405, 408, 427, 432, 436, 437, 444, 447, 457, or 458; two of these courses must be chosen from ELE 408, 427, 444, 447, or 458).

Free Elective: 3 credits.

The major requires 131-133 credits.

Freshman Year

First semester: 15 credits

- 3 CHM 101 General Chemistry Lecture I
- 1 CHM 102 Laboratory for Chemistry 101
- 4 MTH 141 Introductory Calculus with Analytic Geometry
- 3 PHY 203 Elementary Physics I
- 1 PHY 273 Elementary Physics Laboratory I
- 3 General Education requirement

Freshman Year

Second semester: 17 credits

- 3 ECN 201 Principles of Economics: Microeconomics
- 4 MTH 142 Intermediate Calculus with Analytic Geometry
- 3 PHY 204 Elementary Physics II
- 1 PHY 274 Elementary Physics Laboratory II
- 3 CSC 201 Introduction to Computing
- 3 General Education requirement

Sophomore Year

First semester: 17 credits

- 3 CSC 205 Computational Methods for Engineers and Scientists
- 3 MTH 243 Calculus for Functions of Several Variables
- 3 PHY 205 Elementary Physics III
- 1 PHY 275 Elementary Physics Laboratory III
- 3 ELE 201 Digital Circuits Design
- 1 ELE 202 Digital Circuits Design Laboratory
- 3 General Education requirement

Sophomore Year

Second semester: 17 credits

- 3 MTH 362 Advanced Engineering Mathematics I
- 3 PHY 306 Elementary Modern Physics
- 3 ELE 212 Linear Circuit Theory
- 2 ELE 215 Linear Circuits Laboratory
- 3 ELE 205 Microprocessor Laboratory
- 3 General Education requirement

Junior Year

First semester: 18 credits

- 3 MTH 363 Advanced Engineering Mathematics II
- 3 ELE 313 Linear Systems
- 3 ELE 322 Electromagnetic Fields I
- 3 ELE 331 Introduction to Solid State Devices
- 6 General Education requirements

Junior Year

Second semester: 15 credits

- 4 ELE 314 Linear Systems and Signals
- 4 ELE 323 Electromagnetic Fields II
- 4 ELE 342 Electronics I
- 3 General Education requirement

Senior Year⁹

Total credits for two semesters: 32-34

- 5 ELE 443 Electronics II
- 3 Mathematics elective¹⁰
- 3 Engineering elective¹¹
- 3 General Education requirement
- 3 Free elective
- 14-16 Electrical engineering design electives¹²
- 1 ELE 400 Introduction to Professional Practice

Industrial and Manufacturing Engineering

The Department of Industrial and Manufacturing Engineering offers an ABET-accredited curriculum leading to the Bachelor of Science (B.S.) degree in industrial engineering. The Master of Science (M.S.) degree, also offered by the department, is described in the *Graduate Bulletin*.

Faculty: Professor Knight, *chairperson*. Professors G. Boothroyd and Dewhurst; Associate Professors Lawing and Shao; Assistant Professor Sodhi; Adjunct Professors David Olson and Reynolds; Professor Emeritus Nichols.

The industrial and manufacturing engineering curriculum is designed to provide significant strength in mathematics, basic science, and engineering science, together with a carefully coordinated set of courses of particular importance to the professional industrial or manufacturing engineer. Mathematical modeling of production systems and fundamental treatments of important manufacturing processes and assembly are included. Robotics, computer-aided manufacturing, and product

design for manufacturability and assembly are areas that receive considerable attention.

Students are amply prepared to pursue careers in industrial or manufacturing engineering—areas that are becoming increasingly important in efforts to improve industrial productivity in the United States.

The curriculum also provides an excellent background for further formal study at an advanced level.

The major requires 135 credits.

Freshman Year

First semester: 18 credits

- 3 CHM 101 General Chemistry Lecture I
- 1 CHM 102 Laboratory for Chemistry 101
- 3 CSC 200 Introduction to Computer Programming for Engineers
- 3 ECN 201 Principles of Economics: Microeconomics
- 1 EGR 102 Basic Graphics
- 4 MTH 141 Introductory Calculus with Analytic Geometry
- 3 General Education requirement

Freshman Year

Second semester: 17 credits

- 3 ECN 202 Principles of Economics: Macroeconomics
- 3 MCE 162 Statics
- 4 MTH 142 Intermediate Calculus with Analytic Geometry
- 3 PHY 203 Elementary Physics I or PHY 213 Elementary Physics I
- 1 PHY 273 Elementary Physics Laboratory I or PHY 285 Physics Laboratory
- 3 General Education requirement

Sophomore Year

First semester: 16 credits

- 3 IME 220 Introduction to Industrial Engineering
- 3 MCE 263 Dynamics
- 3 MTH 243 Calculus for Functions of Several Variables
- 3 PHY 204 Elementary Physics II or PHY 214 Elementary Physics II
- 1 PHY 274 Elementary Physics Laboratory II
- or PHY 286 Physics Laboratory
- 3 General Education requirement

Sophomore Year

Second semester: 18 credits

- 3 ACC 201 Elementary Accounting I
- 3 CVE 220 Mechanics of Materials
- 3 ELE 220 Passive and Active Circuits
- 3 IME 240 Manufacturing Processes
- 3 IME 325 Computer Solutions in Industrial and Manufacturing Engineering
- 3 MTH 362 Advanced Engineering Mathematics I

Junior Year

First semester: 18 credits

- 3 CHE 333 Engineering Materials or CHE 437 Materials Engineering
- 3 IME 404 Engineering Economy
- 3 IME 411 Probability for Engineers
- 3 IME 432 Operations Research: Deterministic Models
- 3 MCE 341 Thermodynamics
- 3 General Education requirement

Junior Year

Second semester: 15 credits

- 3 IME 412 Statistics for Engineers
- 3 IME 433 Operations Research: Stochastic Models
- 3 Professional elective
- 3 IME 443 Machining and Machine Tools
- 3 MCE 354 Fluid Mechanics

Senior Year

First semester: 18 credits

- 3 IME 444 Assembly and Handling Automation
- 3 IME 449 Product Design for Manufacturability
- 6 Professional electives
- 6 General Education requirements

Senior Year

Second semester: 15 credits

- 3 IME 446 Metal Deformation Processes
- 3 Approved science elective¹³
- 3 Professional elective
- 3 Free elective
- 3 General Education requirement

General Education indicated in several places above refers to one of the electives in the University's General Education program, required in all curriculums leading to a bachelor's degree.

Materials Engineering

The Department of Chemical Engineering offers a curriculum leading to the Bachelor of Science (B.S.) degree in materials engineering.

Faculty: Chemical Engineering faculty; Professor Rockett, *coordinator*.

Graduates will be prepared to continue studies on the postbaccalaureate level in materials engineering, materials science, or chemical engineering, or to enter employment in industries and government agencies where production and research are underway in the development, processing, and marketing of products involving traditional or new uses of metals, alloys, ceramics, composites, polymers, and semiconductors. Products range from large turbines to computer chips. Employment opportunities include basic research, applied research and testing, product design, troubleshooting, pollution control, process supervision, government regulation, economic analysis, quality control, management, and engineering sales.

The materials engineering program begins with General Education requirements and mathematics, chemistry, and physics courses common to many of the other engineering programs. In the sophomore and junior years, many traditional engineering science areas are treated, along with basic courses in materials science and additional chemistry courses. In the final

⁹ See your advisor for help preparing a suitable senior-year program.

¹⁰ A mathematics elective is MTH 215 or any 300- to 500-level mathematics course except MTH 381. MTH 451 is recommended as a mathematics elective.

¹¹ An engineering elective for this curriculum is one of the following engineering science courses: CHE 332, 347; CVE 220; IME 404, 411, 412; MCE 323, 341, 354; and OCE 410.

¹² Electrical engineering design electives may be chosen from any four of the following courses: ELE 401, 405, 408, 427, 432, 436, 437, 444, 447, 457, or 458. However, two of the courses must be chosen from ELE 408, 427, 444, 447, or 458.¹³ Any course for which the prerequisite is met by CHM 101, including PHY 205, 223, 275; any physics course at or above the 300 level; or any course in astronomy, biochemistry and biophysics, biology, botany, geology, microbiology, or zoology. Any other course must be approved by an advisor.

¹³ Any course for which the prerequisite is met by CHM 101, including PHY 205, 223, 275; any physics course at or above the 300 level; or any course in astronomy, biochemistry and biophysics, biology, botany, geology, microbiology, or zoology. Any other course must be approved by an advisor.

year, the application and synthesis of topics previously studied are incorporated into formal courses and project courses. Considerable leeway is allowed at this level in the choice of project topics and courses in specialized areas of materials engineering.

The major requires 128 credits.

Freshman Year

First semester: 16 credits

- 5 CHM 191 General Chemistry
- 1 CHE 101 Foundations of Chemical Engineering
- 4 MTH 141 Introductory Calculus with Analytic Geometry
- 6 General Education requirements

Freshman Year

Second semester: 17 credits

- 5 CHM 192 General Chemistry
- 1 CHE 102 Introduction to Chemical Engineering
- 4 MTH 142 Intermediate Calculus with Analytic Geometry
- 3 PHY 213 Elementary Physics I
- 1 PHY 285 Physics Laboratory
- 3 ECN 201 Principles of Economics: Microeconomics

Sophomore Year

First semester: 16 credits

- 3 CHE 212 Chemical Process Calculations
- 3 CHM 227 Organic Chemistry Lecture I
- 3 MTH 243 Calculus for Functions of Several Variables
- 3 PHY 214 Elementary Physics II
- 1 PHY 286 Physics Laboratory
- 3 MCE 162 Statics

Sophomore Year

Second semester: 15 credits

- 3 CHE 272 Introduction to Chemical Engineering
- 3 CHE 332 Physical Metallurgy
- 3 CHM 228 Organic Chemistry Lecture II
- 3 CVE 220 Mechanics of Materials
- 3 MTH 244 Differential Equations

Junior Year

First semester: 18 credits

- 3 CHE 313 Chemical Engineering Thermodynamics
- 3 CHE 347 Transfer Operations I
- 3 CHE 437 Materials Engineering
- 3 CHM 431 Physical Chemistry
- 3 MTH 215 Introduction to Linear Algebra
- 3 General Education requirement

Junior Year

Second semester: 17 credits

- 3 CHE 314 Chemical Engineering Thermodynamics
- 2 CHE 322 Chemical Engineering Microlaboratory
- 3 CHE 348 Transfer Operations II
- 3 ELE 220 Passive and Active Circuits
- 6 General Education requirements

Senior Year

First semester: 18 credits

- 3 CHE 351 Plant Design and Economics
- 3 CHE 439 Nondestructive Evaluation of Materials
- 3 IME 411 Probability for Engineers
- 3 Engineering science elective (Materials)
- 3 Design elective (Materials)
- 3 General Education requirement

Senior Year

Second semester: 15 credits

- 3 CHE 492 Special Problems (Design, Materials)
- 3 CHE 534 Corrosion and Corrosion Control
- 3 Engineering science elective (Materials)
- 6 General Education requirements

Mechanical Engineering and Applied Mechanics

The Department of Mechanical Engineering and Applied Mechanics offers a curriculum leading to the Bachelor of Science (B.S.) degree in mechanical engineering, which is accredited by the Accreditation Board for Engineering and Technology and, in cooperation with the Department of Ocean Engineering, offers a curriculum leading to the Bachelor of Science (B.S.) degree in mechanical engineering with an ocean engineering option, which is also accredited by ABET. The Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees also offered by the department are described in the *Graduate Bulletin*.

Faculty: Professor Sadd, *chairperson*. Professors Datseris, DeLuise, Faghri, Ferrante, Ghonem, T. Kim, Lessmann, W. Palm, Shukla, Wilson, and F. White; Associate Professor Daniel Olson; Assistant Professors Jouaneh, Taggart, and Zhang; Adjunct Professors Hubbell, Patton, and Tucker.

This curriculum provides a thorough and well-rounded foundation in basic science, mathematics, engineering science, and general education to prepare the graduate to enter a professional engineering career. The curriculum is also excellent preparation for graduate school. The program is strong in providing a background in design, solid and fluid mechanics, systems engineering, and the thermal sciences, including energy and energy transfer. Computer applications are stressed throughout the curriculum. All undergraduates are invited and encouraged to join the Student Section of the American Society of Mechanical Engineers, which sponsors industrial plant visits, special lectures, and other activities.

The work in the first two years consists of basic courses in science (mathematics, physics, chemistry), applied science (mechanics, electricity and magnetism, computer science, theory of mechanisms), and General Education requirements (humanities, social sciences, English communication). All mechanical engineering students must have credit for CSC 200, or the equivalent, before taking MCE courses at the 200 or higher level.

The junior year concentrates on fundamental courses in mechanical engineering (thermodynamics, fluid mechanics, systems engineering, engineering analysis), materials sciences, and electronic devices. Further General Education studies are also covered.

The senior year in mechanical engineering includes machine design, heat transfer, manufacturing processes, computer-aided design, and a wide variety of professional electives such as mechanical control systems, advanced fluid mechanics, advanced mechanics of materials, microprocessor applications, internal combustion engines, alternate energy systems including solar and wind energy, power plants, lubrication and bearings, thermal environmental engineering, vibrations, finite element method, and experimental stress analysis. The program also includes a pair of laboratory courses, which introduce experimental techniques and provide practical experience with the engineering phenomena covered in the classroom.

A considerable amount of computer techniques is integrated throughout the curriculum. Computational facilities in the

College of Engineering include a Digital Equipment Corporation VAX 4000/200 minicomputer, numerous 486 DOS personal computers, and several DEC workstations. The University's Academic Computer Center has an IBM ES/9000 Model 210 VF mainframe computer, plus several personal computer laboratories (both IBM and Macintosh) located throughout the campus.

Students desiring an undergraduate specialization in ocean engineering may choose the program in mechanical engineering with an ocean engineering option. Students enrolled in this option follow the program of study for mechanical engineering during the freshman and sophomore years. The curriculum for the junior and senior years is listed separately.

To receive the Bachelor of Science degree in mechanical engineering, the student must satisfactorily complete all the courses in the following curriculum.

The major requires 137 credits.

Freshman Year

First semester: 17 credits

- 3 CHM 101 General Chemistry Lecture I
- 1 CHM 102 Laboratory for Chemistry 101
- 4 MTH 141 Introductory Calculus with Analytic Geometry
- 3 ECN 201 Principles of Economics: Microeconomics
- 3 CSC 200 Introduction to Computer Programming for Engineers
- 3 General Education requirement

Freshman Year

Second semester: 17 credits

- 4 MTH 142 Intermediate Calculus with Analytic Geometry
- 3 MCE 162 Statics
- 3 PHY 213 Elementary Physics I
- 1 PHY 285 Physics Laboratory I
- 6 General Education requirements

Sophomore Year

First semester: 16 credits

- 3 CVE 220 Mechanics of Materials
- 3 MTH 243 Calculus for Functions of Several Variables
- 3 MCE 263 Dynamics
- 3 PHY 214 Elementary Physics II
- 1 PHY 286 Physics Laboratory II
- 3 MCE 220 Computer Graphics in Mechanical Engineering

Sophomore Year

Second semester: 18 credits

- 3 ELE 220 Passive and Active Circuits
- 3 MTH 244 Differential Equations
- 3 MCE 323 Kinematics
- 3 PHY 341 Introductory Modern Physics
- 6 General Education requirements

Junior Year

First semester: 18 credits

- 3 CHE 333 Engineering Materials
- 3 ELE 221 Electronic Instruments and Electromechanical Devices
- 3 MCE 341 Fundamentals of Thermodynamics
- 3 MCE 372 Engineering Analysis I
- 6 General Education requirements

Junior Year

Second semester: 15 credits

- 3 MCE 317 Mechanical Engineering Experimentation I
- 3 MCE 342 Mechanical Engineering Thermodynamics
- 3 MCE 354 Fluid Mechanics
- 3 MCE 366 Introduction to Systems Engineering
- 3 MCE 373 Engineering Analysis II

Senior Year

First semester: 18 credits

- 3 IME 340 Materials Processing and Metrology I
- 3 MCE 318 Mechanical Engineering Experimentation II
- 3 MCE 423 Design of Machine Elements
- 3 MCE 448 Heat and Mass Transfer
- 6 Professional electives¹⁴

Senior Year

Second semester: 18 credits

- 3 MCE 429 Comprehensive Design
- 3 MCE 430 Computer-Aided Design
- 6 Professional electives¹⁴
- 3 Free elective
- 3 General Education requirement

Mechanical Engineering with an Ocean Engineering Option. Students enrolled in this curriculum will follow the program of study for mechanical engineering during the freshman and sophomore years. The curriculum for the junior and senior years follows.

This major requires 140 credits.

Junior Year

First semester: 18 credits

- 3 CHE 333 Engineering Materials
- 3 ELE 221 Electronic Instruments and Electromechanical Devices
- 3 MCE 341 Fundamentals of Thermodynamics
- 3 MCE 372 Engineering Analysis I
- 3 OCG 401 General Oceanography
- 3 General Education requirement

Junior Year

Second semester: 18 credits

- 3 MCE 317 Mechanical Engineering Experimentation I
- 3 MCE 342 Mechanical Engineering Thermodynamics
- 3 MCE 354 Fluid Mechanics
- 3 MCE 366 Introduction to Systems Engineering
- 3 MCE 373 Engineering Analysis II
- 3 General Education requirement

Senior Year

First semester: 18 credits

- 3 IME 340 Materials Processing and Metrology I
- 3 MCE 410 Basic Ocean Measurements
- 3 MCE 423 Design of Machine Elements
- 3 MCE 448 Heat and Mass Transfer
- 3 OCE elective¹⁵
- 3 General Education requirement

Senior Year

Second semester: 18 credits

- 3 MCE 429 Comprehensive Design
- 3 MCE 430 Computer-Aided Design
- 3 OCE 307 Coastal Engineering Design
- 3 OCE 471 Underwater Acoustics and Data Analysis
- 3 Professional elective¹⁶
- 3 Free elective

¹⁴ The requirement for professional electives must be satisfied by a minimum of three three-credit elective courses in mechanical engineering. The fourth course may be a 300-, 400-, or 500-level course offered by: the College of Engineering (except OCE 346 and 347); or the Departments of Chemistry, Computer Science and Statistics, or Physics; or the Department of Mathematics (one 400- or 500-level course).

¹⁵ One course must be selected from OCE 411, 495, 510, 512, 522, 534, or 561.

¹⁶ The professional elective requirement may be satisfied by any 400-level mechanical engineering course.

Ocean Engineering

The Department of Ocean Engineering offers a curriculum leading to the Bachelor of Science (B.S.) degree in ocean engineering. The department is nationally and internationally recognized as one of the leaders in ocean engineering. The B.S. program is designed to meet criteria for accreditation by the Accreditation Board for Engineering and Technology and is open to qualified students under the New England Regional Student Program. The Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees, also offered by the department, are described in the *Graduate Bulletin*.

Faculty: Professor Spaulding, *chairperson*. Professors Silva, Stepanishen, and Tyce; Associate Professors Grilli and Hu; Adjunct Professors Shonting and Ullman; Professors Emeriti T. Kowalski, Middleton, and Sheets.

This curriculum provides a basic ocean engineering program that will prepare students for direct entry into a professional career or for continued study toward a graduate degree. The curriculum gives students a firm footing in engineering fundamentals. The required ocean engineering courses begin at the freshman level and include laboratory, analysis, and design courses. The total design component must include at least 17 credits. There is a strong emphasis on the application of scientific principles in the ocean environment gained through laboratory courses. Experiments covering several basic areas are employed and provide an integrated approach to investigations into ocean phenomena and processes. Students are involved in the planning and execution of experiments, including collection and analysis of data and the reporting of results. This hands-on experience provides graduates with an understanding of ocean engineering activities in scientific and industrial fields. Three ocean engineering professional elective courses are also required. The program is broad-based and exposes students to the following topics: ocean instrumentation and data analysis, underwater and subbottom acoustics, marine hydrodynamics, coastal and nearshore processes, marine geomechanics, coastal and offshore structures, and corrosion.

To ensure that each student gains an in-depth knowledge of one of the ocean engineering disciplines, the curriculum requires an emphasis in one of five approved sequences of courses, selected among the following areas of specialization: hydrodynamics, structures, geomechanics, acoustics, instrumentation, and data analysis. This emphasis may result in a minor in that department. An Ocean Systems Design Project course in the senior year integrates previously obtained knowledge in a comprehensive design project. This experience may be obtained through an on-campus course, by participating in an ongoing research project, or through an off-campus summer internship in an ocean-oriented private company or governmental laboratory. The internship allows interested students to take advantage of the many opportunities available in the region.

The Department of Ocean Engineering has its headquarters in the Sheets Building and has laboratory facilities in the Middleton Building on the Narragansett Bay Campus. These buildings house most of the department's experimental facilities. Computational facilities include computer and terminal rooms on both campuses. Both IBM and Macintosh computers are networked, and workstations are connected to the Engineering Computer Laboratory and the Academic Computer Center.

Extensive laboratory facilities are available. A 31-foot ocean engineering coastal research vessel, the *West Passage*, is used for both laboratory courses and research. A 100-foot tow tank and a large acoustics tank are located on the Bay Campus, as well as an electronics shop, a diving locker, a machine shop, a corrosion/materials laboratory, and the Marine Geomechanics Laboratory.

The major requires 134–135 credits.

Freshman Year

First semester: 18 credits

- 3 CHM 101 General Chemistry Lecture I
- 1 CHM 102 Laboratory for Chemistry 101
- 4 MTH 141 Introductory Calculus with Analytic Geometry
- 3 ECN 201 Principles of Economics: Microeconomics
- 3 CSC 200 Introduction to Computer Programming for Engineers
- 4 GEL 103 Physical Geology

Freshman Year

Second semester: 16 credits

- 4 MTH 142 Intermediate Calculus with Analytic Geometry
- 3 PHY 213 Elementary Physics I
- 1 PHY 285 Physics Laboratory I
- 1 OCE 101 Introduction to Ocean Engineering
- 3 CHM 112 General Chemistry Lecture II
- 1 CHM 114 Laboratory for Chemistry 112
- 3 General Education requirement

Sophomore Year

First semester: 16 credits

- 3 MCE 162 Statics
- 3 MTH 243 Calculus for Functions of Several Variables
- 3 PHY 214 Elementary Physics II
- 1 PHY 286 Physics Laboratory II
- 6 General Education requirements

Sophomore Year

Second semester: 16 credits

- 3 CVE 220 Mechanics of Materials
- 3 MTH 244 Differential Equations
- 3 ELE 220 Passive and Active Circuits
- 3 OCG 401 General Oceanography
- 1 OCE 215 Ocean Engineering Seminar
- 3 MCE 263 Dynamics

Junior Year

First semester: 18–19 credits

- 3 CHE 333 Engineering Materials or CVE 381 Geotechnical Engineering (4 credits)
- 3 MCE 341 Fundamentals of Thermodynamics or CHE 313 Chemical Engineering Thermodynamics I
- 3 MCE 372 Engineering Analysis I or CVE 352 Structural Analysis I
- 3 MCE 354 Fluid Mechanics
- 3 OCE 410 Basic Ocean Measurements
- 3 General Education requirement

*Junior Year**Second semester: 18 credits*

- 3 IME 404 Engineering Economy
- 3 OCE 471 Underwater Acoustics and Data Analysis
- 3 OCE 307 Coastal Engineering Design
- 3 OCE 411 Basic Coastal Measurement
- 3 Professional elective (Group A)¹⁷
- 3 General Education requirement

*Senior Year**First semester: 17 credits*

- 1 OCE 416 Ocean Engineering Seminar
- 4 OCE 495 Ocean Systems Design Project¹⁸
- 6 Professional electives (Group A)¹⁷
- 3 Professional elective (Group B)¹⁹
- 3 General Education requirement

*Senior Year**Second semester: 15 credits*

- 3 MCE 366 Introduction to Systems Engineering or CVE 495 Civil and Environmental Engineering Systems
- 3 Professional elective (Group B)¹⁹
- 3 Free elective
- 6 General Education requirements

COLLEGE OF HUMAN SCIENCE AND SERVICES



Barbara Brittingham, *Dean*
Leo E. O'Donnell, *Associate Dean*
Milton Butts, Jr., *Assistant Dean*

The College of Human Science and Services is a people-oriented college designed to focus on the human and nonhuman resources needed to help individuals and groups solve human problems encountered in contemporary society. Programs in the college prepare students for a variety of professions in three basic areas: teacher education, health-related fields, and fields that have evolved from the University's historic land-grant mission in home economics. These programs include both formal and informal experiences with people in a wide variety of public service settings which enable students to develop the competencies needed in the emerging field of human services. The teacher education programs offered through the College of Human Science and Services are outlined in the following departmental descriptions. For more information on teacher education programs, see pages 13-14.

The degrees offered by the college include: 1) a Bachelor of Science degree with majors in communicative disorders; consumer affairs; dental hygiene; elementary and secondary education; human development and family studies; human science and services; physical education; textiles, fashion merchandising, and design; and textile marketing; and 2) a Bachelor of Science degree in home economics with a major in home economics.

The college is composed of six departments and a Division of Interdisciplinary Studies.

The Institute of Human Science and Services, the research and service branch of the college, promotes these activities in human service areas across all departments of the college. The institute conducts research in education and educational testing, lifelong learning, human transition, child development, communicative disorders, special populations, gerontology, and exercise physiology. Faculty conducting institute research also teach within the various departments of the college.

The college sponsors a number of organizations and activities that provide special opportunities for students:

URI Clearinghouse for Volunteers is a service that matches prospective volunteers with positions in Rhode Island's human service agencies, giving students opportunities to explore career options and provide needed service.

Cardiopulmonary Laboratory is equipped with the latest means of measuring physical activity and its stresses and effects. It sponsors programs for adult fitness and conducts research programs related to fitness, sport, and nutrition.

Child Development Center is a modern facility that provides day care and preschool programs; it offers opportunities for undergraduate students to observe and learn to work with young children.

Microcomputer Laboratory contains a variety of up-to-date microcomputers with software designed for use in elementary and secondary classrooms.

Historic Textile and Costume Collection is a teaching and research collection of over 16,000 artifacts with an emphasis on historic New England clothing and textiles. Objects range from archaeological textiles to 20th-century designer garments.

¹⁷ The requirement for professional electives in Group A must be satisfied by a minimum of two approved three-credit elective courses at the 300, 400, or 500 level in engineering. One three-credit elective must be a 400-level mathematics course.

¹⁸ An approved off-campus experience between the junior and senior years can be substituted for OCE 495.

¹⁹ The requirement for professional electives in Group B must be satisfied by a minimum of two approved three-credit courses in ocean engineering.

Physical Therapy Clinic offers physical therapy services to the community and provides a setting for clinical education and research for students in the physical therapy program.

Speech and Hearing Clinic supports over 2,000 client visits per year in the areas of speech and hearing assessment and therapy and provides observational, clinical, and research support for communicative disorders.

Dental Hygiene Clinic offers preventive services to persons 18 years or older. Services include a dental prophylaxis, X-ray films, patient education, and fluoride treatments.

Faculty

Communicative Disorders: Associate Professor J. Singer, *chairperson*. Professors Beaupre, Culatta, and Grubman-Black; Assistant Professor Harris; Clinical Assistant Professor Regan; Adjunct Assistant Professor R. Singer; Clinical Coordinator Connors.

Dental Hygiene: Associate Professor B. Brown, *chairperson*. Assistant Professor Saunders; Clinical Instructors Allen, Aschaffenburg, Barry, Bhattacharya, Calitri, Carlotti, Chapman, Feldman, George, Hogan, Kaufman, Kershaw, Kilcline, Mullane, Nager, Pregiolato, Renz, Schwab, and Woodward.

Education: Professor T. Kellogg, *chairperson*. Professors Brittingham, Croasdale, Long, MacMillan, McKinney, Purnell, Russo, and G. Willis; Associate Professors A. Allen, Boulmetis, Byrd, R. Nelson, Soderberg, R. Sullivan, and Trostle; Assistant Professors Barton, Hicks, Valdez, and Young; Adjunct Professors Knott and Tierney.

Human Development and Family Studies: Associate Professor Caruso, *chairperson*. Professors P. Clark, S. Cohen, P. Maynard, and Rae; Associate Professors Adams, Anderson, Horm-Wingerd, Richmond, and Schaffran; Assistant Professors Blood, Kalymun, Noring, Rolley, K. Schroeder, and Xiao; Adjunct Professor Guthrie.

Physical Education and Health: Professors Bloomquist, G. Cohen, Manfredi, Nedwidek, and Sonstroem; Associate Professors Crooker, O'Donnell, O'Leary, Polidoro, Rowinski, and Seleen; Assistant Professors Agostinucci, Blanpied, Lamont, J.S. Norris, Robinson, and Roush; Special

Instructors Marsden and McAniff; Clinical Coordinator Congdon; Clinical Assistant Professor Winter.

Textiles, Fashion Merchandising, and Design: Professor Welters, *chairperson*. Associate Professors Bide, Higa, Helms, and Ordonez; Assistant Professor Harps-Logan; Adjunct Professor Emery; Instructor Perry; Curator Kaye.

Division of Interdisciplinary Studies: Consumer Affairs—Assistant Professor Noring, *program head*; Gerontology—Professor Clark, *acting director*; Human Science and Services—Professor McKinney, *program head*; Special Populations—Associate Professor Crooker, *program head*; Urban Affairs—Professor Feld, *director*.

General Education Requirements. All students pursuing a bachelor's degree in the College of Human Science and Services are required to develop a 39-credit program in General Education within the framework listed below. For a complete description of the General Education requirements, see page 9.

Individual programs may require specific courses for their area.

English Communication (6 credits): a minimum of three credits in written communication from courses in Group Cw; a minimum of three credits in oral communication from COM 101, 103.

Fine Arts and Literature (6 credits)

Foreign Language and Culture (6 credits)

Letters (6 credits)

Mathematics (3 credits)

Natural Sciences (6 credits)

Social Sciences (6 credits): a minimum of three credits from anthropology, psychology, or sociology courses approved for General Education.

Total: 39 credits.

Students in the program in elementary education must follow the General Education requirements of the College of Arts and Sciences.

Division of Interdisciplinary Studies.

This division provides an environment in which faculty and students can bring together interdisciplinary programs and courses of study in human science and services. The division functions to promote and encourage the creation, implementation, and evaluation of interdisciplinary

courses and programs of study taught by faculty from two or more departments within the University. In addition, the division assumes responsibility for the development, review, and implementation of programs of study that draw significantly on two or more human science and services departments. The division maintains administrative responsibility for the following programs: Consumer Affairs (see page 73); Gerontology (see page 11); Home Economics (see page 75); Human Science and Services (see page 76); and Special Populations (see page 12).

Minors: Interdisciplinary Nondegree

Programs. Students can declare a minor, which will appear on their transcripts as a category separate from their major. Credits may be drawn from any cohesive combination of courses. A minor may be defined as: 1) the completion of 18 or more credits in any of the minors that have been proposed by one or more departments and approved by the Curriculum Affairs Committee, Faculty Senate, and President; 2) the completion of 18 or more credits within a curriculum other than the student's major; or 3) the completion of 18 or more credits of related studies offered by more than one department and approved by a member of the faculty competent in the area and the Dean of the college. At least 12 of the 18 credits must be at the 200 level or above. Elective courses and courses in General Education may be used for the minor. No course may be used to apply to both the major and a minor field of study. A minimum average of 2.00 must be earned in the courses in the minor. Courses in the minor may not be taken under the pass-fail option. It is the responsibility of the student to declare and obtain approval for a minor no later than the end of the add period at the start of the senior year.

Field Work. Many of the academic programs in the College of Human Science and Services require a supervised field work experience as part of the degree requirements. This experience is designed to provide students with the opportunity to apply classroom knowledge in a career-related setting. Placements are made in a wide variety of agencies such as public schools, health care facilities, day care centers, and other human service settings. Satisfactory completion of a required field experience depends on achievement of basic competencies established by the academic

department in cooperation with the agency. The University supervisor is responsible for determining whether or not the student has attained the required competencies and, in some cases, may extend the time required for the experience until the student's performance is satisfactory. If in the opinion of the University supervisor the performance of the student is unsatisfactory, and particularly if client/patient safety is at risk, the student may be removed from the field experience prior to the end of the semester or term.

Graduation. It is the responsibility of the student to file an Intent to Graduate form and a curriculum work sheet approved by the advisor in the Dean's Office. The deadline is September 15 for May graduation, April 5 for August graduation, and May 5 for December graduation.

Course Load. Approval of the advisor and the Dean is needed for a schedule of more than 19 credits per semester.

Repeating Courses for Credit. Unless otherwise stated in the course description, a course cannot be repeated for credit. Credit can be counted only once toward the total credits required for graduation. Repeating courses in which a grade of C or better was earned requires approval of the student's academic dean; students may need to take such courses on a pass-fail basis.

Transfer Students. Transfer students should be advised that admission to some programs in the College of Human Science and Services requires meeting certain prerequisites or separate admission criteria. Teacher education programs in the Department of Education, Department of Human Development and Family Studies, and the Department of Physical Education and Health have specific admission criteria and generally require that a matriculated student complete at least one semester of work at the University of Rhode Island before applying for admission. Transfer students may be admitted to the University, but are not admitted directly into these programs.

The Plan for Early Contingent Admission to the Master of Science Degree Program in Physical Therapy requires careful and timely course planning typically beginning with the freshman year at the University. It is unlikely that transfer students would have the appropriate sequence of

courses, including the prerequisites, that would allow them to take advantage of these options.

Students interested in any of the above programs should refer to the specific program descriptions on the following pages and consult the department for additional information.

Communicative Disorders

This curriculum leads to a Bachelor of Science (B.S.) degree in communicative disorders. In addition to General Education requirements and appropriate free electives, a major of 34 semester hours in communicative disorders includes 25 semester hours of required courses and nine semester hours of professional electives.

The required courses are CMD 260, 261, 372, 373, 374, 375, 376, and 465. The remaining nine credits (three courses) must be selected from the four areas listed below with a limit of one course in a given area:

Area A (0-3 credits). *Normal Human Development and Adjustment:* HDF 200, 201, 450; PSY 232, 235.

Area B (0-3 credits). *Special Populations:* CMD 475 (2 credits); HDF 220; PSY 254, 442.

Area C (0-3 credits). *Supportive Disciplines:* COM 220; EDC 312, 424; HSS 320; LIN 201; PSY 300, 384, 386; STA 220.

Area D (0-3 credits). *Honors Work, Individual Research, or Special Problems within the department:* CMD 391, 392, 491, 492.

With careful early planning, students can use free electives to achieve a double major or to explore special-interest areas in depth. Students should anticipate the necessity for graduate study in speech-language pathology or audiology. The typical minimum entry requirement for graduate study is a quality point average of 3.00.

A total of 120 credits is required for graduation.

Accelerated Bachelor's-Master's Degree Program in Speech-Language Pathology or Audiology. URI sixth-semester students pursuing a Bachelor of Science (B.S.) degree in communicative disorders with 25 credits of electives remaining may apply for acceptance into an accelerated master's degree program in either speech-language pathology or audiology. Students accepted

into this program follow a specified sequence of graduate-level course work and clinical practicum during their senior year, and complete the master's degree in one additional year of full-time graduate study. A cumulative quality point average of 3.00 overall and 3.20 in the major is required, with MAT or GRE scores in at least the 50th percentile. Three letters of recommendation (two from URI communicative disorders faculty) are also needed.

This accelerated program is not available to non-URI undergraduates or to part-time graduate students.

Students in this program are required to take a minimum of 25 specified course work and practicum credits (16 credits at the 500 level) in the senior year, and 30 credits at the 500 level in the fifth year. Requirements for the M.A. and M.S. degrees in speech-language pathology or audiology are outlined in the *Graduate Bulletin*.

Consumer Affairs

This curriculum leads to the Bachelor of Science (B.S.) degree in consumer affairs. The interdisciplinary program provides students with course work and experience that will prepare them for entry-level positions in the areas of housing management, personal financial planning, and consumer relations and public policy. Course work in consumer affairs is combined with selected courses in business, economics, political science, psychology, and related areas. Field experience obtained from internships is an important component of the program.

Students who wish to be accepted into the degree program in consumer affairs must have completed and earned at least a combined 2.00 quality point average in the following courses: CNS 220; ECN 201, 202; and MTH 107, 108, 111, or 131.

The following courses are required of all students: one WRT course; COM 101; MTH 107, 108, 111, or 131; PSY 113; SOC 100 or 102; ECN 201 and 202; PSC 113; PHL 217, MKT 321, MGT 380, or PSC 368; PSC 288; CNS 422, MKT 415, or STA 412; STA 308 or 409; CSC 101 and PHL 101.

Some of these courses may be used to help fulfill the General Education requirements.

The following consumer affairs courses are required: CNS 210, 220, 320, 340, 420, as well as BSL 333, ECN 302 or 337, and MKT 311; and a field experience (minimum of three credits of CNS 477 or 478, or UYA 301 or 302).

Students are required to take an additional 18 credits from one of the three following professional concentrations.

Consumer Relations and Public Policy: three required courses are BUS 450, CNS 350 and 457. Students may select the other three courses from COM 210; ECN 337, 403; FSN 150, 207; JOR 110, 200, 340; MKT 405; PSC 304, 368; REN 341; STA 412; and TMD 103.

Housing Management: CNS 440 is required. Students must select five courses from the following: CNS 342; CPL 410, 540; ECN 402; FIN 341; HDF 220 or HSS 222; HDF 440.

Personal Financial Planning: required courses are ACC 300X or 201; CNS 321, 415; FIN 301; HDF 450 or an equivalent skills course. The remaining course can be selected from INS 301, 425; FIN 322, 341.

Students take 12 credits of free electives. A total of 120 credits is required for graduation.

Dental Hygiene

The Department of Dental Hygiene offers a four-year program leading to the Bachelor of Science (B.S.) degree. A Certificate in Dental Hygiene is awarded at the completion of the two clinical years. The program in dental hygiene is accredited by the Commission on Dental Accreditation.

BACHELOR OF SCIENCE

This curriculum offers maximum flexibility in providing professionally oriented study and a foundation in general education. It is designed to prepare the students to assume responsible positions in education, such as in schools of dental hygiene, hospital programs, and school systems as well as in private practice. Students who complete this curriculum are prepared to continue with graduate study.

Since the professional component requires intensive and continuous clinical training, students must be enrolled on a full-time basis. At the completion of the first clinical year, the student is placed in private dental offices for field training experience.

A major of 47 credits in dental hygiene includes: DHY 101 (1), 125 (4), 126 (3), 128 (2), 135 (3), 136 (3), 141 (2), 227 (3), 231 (2), 237 (4), 238 (4), 244 (2), 248 (2), 252 (3), 350 (3), 462 (3), 464 (3).

In addition, candidates for the Bachelor of Science degree are required to take the following: CHM 101, 102 or 103, 105 (4), 124 (3), 126 (1); COM 101 (3); EDC 312 (3); FSN 207 (3); MIC 201 (4); PCL 221 (2); PSY 113 (3), 232 (3); SOC 100 (3); WRT 101 (3); ZOO 121 (4), 242 (3), 244 (1).

Students must also fulfill the General Education requirements.

A limited number of students are accepted as transfers from other institutions. Transfer students must have at least one semester of general chemistry prior to enrolling in the clinical phase of the program. Individuals seeking admission as transfer students should contact the Department of Dental Hygiene.

Post-Certificate Bachelor's Degree Program. This program is designed for dental hygienists who have earned a certificate or an Associate in Science degree in dental hygiene from another institution and who are interested in earning a Bachelor of Science degree within the dental hygiene discipline. The main objective of this program is to provide educational experiences that will enhance the professional hygienist's self-image and self-enrichment as well as expand career options. Graduates of this program are prepared to assume positions of responsibility and leadership in a variety of health care, community, and educational settings.

Post-certificate students may pursue the Bachelor of Science degree on either a full-time or part-time basis. In addition to University admission requirements, applicants must have passed the National Dental Hygiene Examination.

Education

The curriculums in elementary and secondary teacher education lead to the Bachelor of Science (B.S.) degree. Students wishing to enroll in the early childhood education program must major in human development and family studies and seek admission to the teacher education component of this program, as outlined below. The Master of Arts (M.A.) degree programs in education are described in the *Graduate Bulletin*.

The curriculums offer a balanced program of academic preparation and professional training. The required professional courses contribute directly to understanding the teacher's role in society and to the development of teaching skills.

Successful completion of the early childhood education program leads to an initial teaching certificate for the primary grades (N-2), while completion of the elementary education program leads to an initial teaching certificate for grades 1-6. The secondary education program leads to an initial teaching certificate for a specific subject area in grades 7-12.

Admission Requirements. Students interested in undergraduate teacher education programs are required to apply for admission to the Office of Teacher Education. Applications for admission to teacher education programs are normally submitted during the sophomore year. Applications will be reviewed by a departmental screening committee based on the following criteria: 1) recommendations from faculty and others who have knowledge of the candidate's experience or interest in working in education; 2) a writing sample expressing career goals, experience in working with children, and expectations as a teacher; 3) scores on a standardized test(s) of basic skills; 4) the student's academic record, including a cumulative quality point average of 2.50 or better and grades in the academic major or specialization averaging 2.50 or better.

Due to limited staff and facilities, admission to the programs in elementary education and early childhood education is limited. Some applicants meeting the minimum requirements may not be admitted due to limited space. Students should check with the department or their University College advisor as early as possible for additional information.

Students denied admission can petition the department for a review of the decision. In such cases, the departmental screening committee meets to consider the appeal. Only exceptional circumstances will lead the appeal committee to override the academic record criteria (2.50 cumulative quality point average and 2.50 in the academic major or specialization).

Applicants who fail to gain admission should seek counsel from an appropriate advisor. Students can reapply for admission but should understand that this may delay their anticipated graduation date.

For courses required for early childhood education, see page 76. For more information on teacher education programs, see pages 13-14.

Students entering the University in the fall of 1993 and thereafter who are subse-

quently admitted to the program in elementary education will be required to complete a Bachelor of Arts degree. Students must select a major in the College of Arts and Sciences in addition to the major in elementary education and must fulfill the General Education requirements of the College of Arts and Sciences. See program requirements for the College of Arts and Sciences on pages 33–53. **Students should be aware that this program will normally require four and a half years to complete.**

The professional sequence courses required for elementary education are: EDC 250, 312, 102 or 360, 424, 452, 453, 454, 455, 456, 457, 458, 459 and EDC 425 or HDF 302. These courses are taken prior to student teaching. EDC 484, 485, and 460 make up the student teaching experience. The following are also required and can be taken as part of the General Education requirements: COM 101, GEG 103 or 104, HIS 142, PSY 113, 232, WRT 101, and a one-credit health education course or equivalent. Students should contact the Department of Education for more details.

The professional sequence courses required for secondary education are: EDC 250 (general) and 250 (with methods), 312, 102 or 360, 371, 430, and 448. These courses are taken prior to student teaching. EDC 484 and 485 make up the student teaching semester. PSY 113 and HDF 310 are also required.

Elementary and secondary education students will plan, in cooperation with an advisor, an academic specialization of at least 30 credits. Elementary education students should follow the requirements outlined for an Arts and Sciences major. Secondary education students follow the specialization course requirements for the area in which certification is sought. Secondary certification programs are offered in biology, chemistry, English, general science, history, mathematics, modern language, physics, and social studies.

Students must maintain minimum quality point averages of 2.50 overall and 2.50 in the major or specialization, and attain a grade of at least C in EDC 430 and 448 (secondary); EDC 424, 427, and 428 (elementary); HDF 303, EDC 424, 426, and 429 (early childhood) to be eligible for student teaching. Failure to maintain these averages will result in "program probation," a one-semester period during which students have the opportunity to earn acceptable grades but may not student teach.

Failure to return grade averages to acceptable standing after one semester leads to dismissal from the program.

The major in elementary education requires 138 credits; secondary education requires 120 credits.

Home Economics

There are two programs in home economics: general home economics and home economics in the urban environment.

Each leads to the Bachelor of Science (B.S.) degree in home economics. Interdisciplinary in nature, the programs provide for academic work in all areas of home economics as well as in other disciplines. Students are prepared for a broad range of careers in business, journalism, community agencies, housing authorities, consumer protection agencies, and schools.

Students are required to take 40–41 credits of home economics core courses, including: CNS 220, 340; FSN 150, 207; HEC 400; HDF 200, 330; HSS 320; and TMD 103, 216. Three additional credits must be chosen from specified lists in each of the areas of consumer studies, human development, food science and nutrition, and textiles.

The program in *general home economics* requires 18 credits of professional electives; these should be chosen with the advisor's approval.

Students choosing *home economics in the urban environment* must select URB 210 and URB 498 or 499, three credits of quantitative methods chosen from a specified list, nine additional credits in urban affairs, plus three additional credits to be chosen with the assistance of an advisor.

Students wishing to major in home economics are strongly encouraged to meet early and often with an advisor to plan their course of study.

Human Development and Family Studies

The curriculum in human development and family studies leads to a Bachelor of Science (B.S.) degree. The Master of Science (M.S.) degree, also offered by the department, is described in the *Graduate Bulletin*. The undergraduate curriculum provides a general background for work with children, families, and adults. Most professions in human development and family studies require academic work beyond the bach-

elor's degree for continuing professional work and advancement. Individuals with a baccalaureate degree are employed, however, as professionals in nursery schools, day care centers, institutions and hospitals, and in recreational, child guidance, casework, and other community agencies. Some of the courses in this curriculum, plus certain others in education, meet the requirements for the initial Early Childhood Education Certificate in Rhode Island. For more information, see pages 13–14. Students seeking admission to the bachelor's degree program in human development and family studies must complete the following courses with an overall quality point average of 2.00 or better prior to acceptance for admission: HDF 200 or 201, PSY 113, SOC 100, and three General Education credits in mathematics.

Students are required to complete the following core curriculum: 1) 12 credits of core courses including HDF 200, 201, 330, and 202; and 2) six to 15 credits of experiential learning chosen from the following options—HDF 380/381; HDF 497; HDF courses that include one credit allocated to practica, such as 203, 221, and 406; EDC 484/485 (early childhood education students only); and University Year for Action.

Additionally, students are required to complete a 15-credit concentration in one of the following four areas. Each area consists of nine credits of required courses and six credits to be chosen from a list of restricted electives.

Child and Adolescent Development: required are HDF 203, 310, 400, with restricted electives to be selected from HDF 302 or EDC 425, HDF 357, 406, 432, 434, 455.

Adult Development and Aging: required are HDF 220, 221, 420, with restricted electives to be selected from HDF 421, 431, 437, 440, CNS 342.

Family Studies: required are HDF 430, 433, 434, with restricted electives to be selected from HDF 421, 431, 432, 437, CNS 210, 320, 340.

General Studies in Human Development and Family: required are HDF 420, 430, 203 or 310 or 406, with restricted electives to be selected from HDF 150, 357, 400, 431, 432, 433, 434.

To enhance their concentration, students must also complete 15 credits of professional electives. Professional electives must be approved in consultation with an

advisor, and nine of the 15 credits must be at the 300 level or above. Field experience does not meet this requirement.

The program requirements also include 24–33 credits of free electives.

Students who wish to meet the requirements for the initial Early Childhood Education Certificate in Rhode Island must apply to Early Childhood Education through the Office of Teacher Education. If admitted to Early Childhood Education, students must complete the child and adolescent development concentration. The following requirements must also be completed as part of the state-approved teacher education program: HDF 301, 303, 357, and 302 or EDC 425; FSN 207; EDC 102, 250, 312, 350, 424, 426, 429, 484, 485. A portion of these requirements fulfill the professional electives; EDC 484 and 485 meet the requirement for experiential learning.

See pages 13–14 for admission requirements, certification in other states, and other information regarding teacher education.

Students in early childhood education must maintain a quality point average of 2.50 overall and 2.50 in the major, and attain a grade of at least C in HDF 303, EDC 424, 426, and 429 to be eligible for student teaching. Failure to maintain these averages will result in “program probation,” a one-semester period during which students have the opportunity to earn acceptable grades but may not student teach. Failure to return grade averages to acceptable standing after one semester will lead to dismissal from the program.

A total of 120 credits are required for graduation.

Human Science and Services

This curriculum leads to the Bachelor of Science (B.S.) degree in human science and services. The program is interdisciplinary and allows students to build academic programs consistent with their personal and career goals.

The program is designed primarily for students who are interested in the broad field of human science and services along with a combination of supporting or applied areas. Career opportunities are varied and include entry-level positions in fields such as health, recreation, instruction and training, family services, and consumer services. Many professional areas in human services require graduate study for

significant career advancement; this program is also designed to serve as preparation for a variety of graduate programs. Close contact with an academic advisor is strongly recommended for students in this program.

Required course work includes: PHL 217,¹ PSY 113² or SOC 102² and ECN 100² or PSC 113.² A course in ethics is strongly recommended. In addition, students complete a core in human science and services: HDF 200, 201; HSS 222, 320, 350, 399; and a seminar. Each student in the program must also complete two option areas of approximately 18 credits each. Choices of the primary option area include: adulthood and aging, child and youth studies, community health, family studies, home economics, housing, human development, instructional communication, pre-physical therapy, and recreational program services. A wide range of choices is available for the second option area, many of which allow the student to study allied fields in other colleges at the University. Each option area has specific course requirements (some of which include natural science courses that may be taken as General Education requirements); students should check with their academic advisor for a detailed description of the requirements and options.

The program requirements also include a field experience (of at least six academic credits), professional electives (15 credits), and free electives (12 credits).

A total of 129 credits is required for graduation.

Physical Education

This curriculum leads to a Bachelor of Science (B.S.) degree with a major in physical education. The Master of Science (M.S.) program in physical education is described in the *Graduate Bulletin*.

The major, which has two options, is designed for students who plan to pursue a career within the broad field of health and physical education. Students can prepare for certification as public school teachers (physical education K–12) with additional study opportunities in elementary and secondary physical education, athletic coaching, athletic training, and corrective and adapted physical education. For those who may be interested in non-teaching careers, the curriculum offers a non-teaching option with a specialization in physical fitness or in an individual interdisciplinary area of interest.

Regardless of which of the two major program options the student is pursuing, the following courses are required of all majors: PED 217, 270, 369, 370; physical activity majors practicum (8 credits); HLT 272; BIO 101, 102; chemistry or physics (3 credits); EDC 312; PSY 113, 232; and ZOO 121, 242, 343.

All students are required to complete a minimum of eight practicum credits. All students must take one credit from PED 130, 230, 330, 340, 346, 347, or 430; one credit from PED 131, 133, 140, 153, 160, 233, 234, 235, 242, 251, 253, or 260; and one credit from PED 120. Students enrolled in the teacher certification option must complete five additional credits taken from the following: one credit from PED 321; one credit from PED 222 or 223; 1.5 credits from PED 115 A–H; and 1.5 credits from PED 215 A–G. Students enrolled in the non-teacher certification option must complete five additional credits taken from any major practicum or basic instruction activity course with the approval of their advisor.

In addition to the credit requirements in PED 115 and 215, all students enrolled in the teacher certification option must demonstrate proficiency in a minimum of four activities in each of the two courses. Proficiency may be demonstrated by: 1) the successful completion of an additional major practicum course; 2) passing a proficiency examination administered and verified by a designated examiner; or 3) participation as a member in a varsity or club sport at the University. Participation must be verified in writing by the head coach.

Additionally, all students pursuing the B.S. degree in physical education must complete a two-day camping experience at the W. Alton Jones Campus. All incoming freshmen should check with their University College advisor for further details.

Teacher Certification Option. This option is designed for students seeking teacher certification in physical education at the elementary and secondary school levels. The curriculum allows a broad exploration of subject area, but is flexible enough to provide additional areas of study in teaching, coaching, athletic training, and corrective and adapted physical education. Completion of the NASDTEC-approved certification program fulfills the requirement for teacher certification in the state of Rhode Island and in 25 additional states.

Students interested in undergraduate teacher education programs are required to apply for admission to the Office of Teacher Education. Applications for admission to teacher education programs are normally submitted during the sophomore year. Applications will be reviewed by a departmental screening committee based on the following criteria: 1) recommendations from faculty and others who have knowledge of the candidate's experience or interest in working in education; 2) a writing sample expressing career goals, experience in working with children, and expectations as a teacher; 3) scores on a standardized test(s) of basic skills; 4) the student's academic record, including a cumulative quality point average of 2.50 or better and grades in the academic major or specialization averaging 2.50 or better.

Students denied admission can petition the department for a review of the decision. In such cases, the departmental screening committee meets to consider the appeal. Only exceptional circumstances will lead the appeal committee to override the academic record criteria (2.50 cumulative quality point average and 2.50 in the academic major or specialization).

Applicants who fail to gain admission should seek counsel from an appropriate advisor. Students may reapply for admission to a teacher education program but should understand that this may delay their anticipated graduation date.

Within the teacher certification option, the following courses are required in addition to those required of all majors: PED 295, 314, 315, 324, 380, 410; HLT 367, 377; 12 credits from EDC 486, 487, 488, 489; EDC 485; eight credits of professional electives; and 11 credits of free electives.

All students must have a quality point average of 2.70 in all physical education and health course work prior to student teaching.

Non-Teacher Certification Option. This option is designed for students seeking preparation for careers in community and agency settings. The option provides additional opportunity for a specialization in physical fitness or in an interdisciplinary area of interest.

In addition to the requirements listed above for all physical education majors, students in the non-teacher option are required to take: HLT 123; PED 280; three

credits of seminar; 12 credits of supervised field work (HLT or PED 486); 18–24 credits of specialized work; and 16 credits of free electives.

Students selecting the physical fitness specialization must take: FSN 207; PED 243, 275, 325, 425; and three credits from ACC 201, 202; HDF 150, 220, 450; MGT 301; MGS 207; MKT 301; PED 227, 391, 410; or PSY 103.

Students who do not specialize in the physical fitness or the interdisciplinary emphasis may complete a minimum of 18 credits in a college or a University minor. See page 11 for definition of a minor.

Plan for Early Contingent Admission to the Master of Science (M.S.) Degree Program in Physical Therapy. The department participates in the early contingent admission plan for the M.S. in physical therapy. This program is described on page 13.

A total of 130 credits is required for graduation.

Textiles, Fashion Merchandising, and Design

This curriculum leads to a Bachelor of Science (B.S.) degree. The Master of Science (M.S.) program is described in the *Graduate Bulletin*.

The major is open to both men and women with ability and professional interest in the artistic and technical aspects of the subject. Specialized programs of study prepare students for positions in the merchandising of apparel and interior furnishings, textile and apparel manufacturing, consumer services, or museum work. Qualified students can prepare for graduate studies.

The following core courses are required: TMD 103; 224; 216 and 336, or 222 and 327; 303;³ 313; 240, 340, 406, or 440; 433;⁴ CNS 220; ECN 201 and 202; CHM 103, 105, 124, and 126. Twelve credits of TMD electives (six credits must be upper-level courses) and 18 credits of professional electives (nine credits from any one area) are required. Students should select TMD electives and professional electives in accordance with the specializations outlined below. Students must have completed the General Education Mathematics requirement before admission into the degree-granting college.

Apparel Studies. Students choosing this area of emphasis should select 12 credits of electives from TMD 222, 325, 327, 335, and an additional 18 credits of professional electives⁵ from art, marketing, management, or theatre.

Fashion Merchandising. Students choosing this area of emphasis should select 12 credits of electives from TMD 222, 232, 327, 332, 422, 432, and an additional 18 credits of professional electives⁵ from accounting, business law, management, management science, marketing, and/or art.

Interior Furnishings and Design. Students choosing this area of emphasis should select 12 credits of electives from TMD 216, 316, 336, 406, 416, 496, and an additional 18 credits of professional electives⁵ from art and/or business.

General TMD Program. Students may structure their own programs by concentrating course work in areas such as consumer studies, museum work, journalism, or gerontology. By the end of the sophomore year, students should file a program of study with their advisor. Selection of the 12 required TMD elective credits and the 18 professional elective credits⁵ should strengthen career goals and interests.

Textile Science. Students selecting this area of concentration should take TMD 403 and 413 as well as additional chemistry, chemical engineering, and/or statistics courses. An internship in textile manufacturing is recommended. By the end of the sophomore year, students should file a program of study with their advisor. The 18 credits of professional electives⁵ should be selected from: MTH 111, 131; PHY 111 and 112 or 213 and 214; STA 308 or 412 or CSC 201; CHM 112, 114, 212, 226, 227, or 228. Opportunities for off-campus study in other areas of textile science are available through the New England Land-Grant Student Exchange Program.

¹ May be taken as part of the General Education requirements (Letters).

² May be taken as part of the General Education requirements (Social Sciences).

³ Organic chemistry is a prerequisite for TMD 303.

⁴ Economics is a prerequisite for TMD 433 and CNS 220.

⁵ Professional electives are courses related to the student's career goals and are subject to approval by an advisor.

A total of 125 credits is required for graduation.

Textile Marketing

This interdepartmental curriculum leads to a Bachelor of Science (B.S.) degree with a major in textile marketing. It combines the professional requirements of a major in textiles with the requirements of the College of Business Administration and is designed to prepare students for wholesale and retail marketing positions in the textile industry. Before admission into the degree-granting colleges, students must complete CHM 103, 105, 124, and 126, and the General Education Mathematics requirement.

Due to limited staff and facilities, transfers from University College to the undergraduate degree program in textile marketing must be limited to no more than 10 a year. Those admitted stand in the highest 10 when cumulative quality point averages are computed at the end of the third semester. Although cumulative averages are not the sole criterion for admission, students with overall quality point averages of less than 2.50 are advised that there is little chance for admission to this program.

Students selecting this curriculum must take the following courses: TMD 103, 224, 303, 313, 240, or 340 or 406 or 440, 403, 433, and three credits of a TMD elective; CHM 105, 126; MTH 131; STA 308, 412; CSC 201; ACC 201 and 202; MGT 300 or 301; BSL 333; MKT 301, 311, 415, and nine credits of MKT electives.

Students must also take the following courses to complete the General Education requirements: MTH 111; CHM 103, 124; and ECN 201, 202.

A total of 120 credits is required for graduation.

COLLEGE OF NURSING



Jean R. Miller, *Dean*
Dayle H. Joseph, *Assistant Dean*

The College of Nursing offers a curriculum leading to the Bachelor of Science (B.S.) degree. The Master of Science (M.S.) and the Doctor of Philosophy (Ph.D.) degrees are offered by the college and are described in the *Graduate Bulletin*.

Faculty: Professors Hirsch, S. Kim, Schmieding, and Schwartz-Barcott; Associate Professors Feather, Fortin, Garey, Joseph, McElravy, McGrath, and Yeaw; Assistant Professors Bridges, Burbank, Daigneault, Dufault, Evans, Fimbel-Coppa, Godfrey, Haggerty, Hall, Hames, Martins, Padula, M. Palmi, Twomey, Viau, and Waldman.

The baccalaureate program is designed to prepare men and women with academic and personal potential to become professional nurses. It aims to develop mature, well-informed graduates who will take their places as responsible members of society in meeting the challenges of health care delivery and continued learning.

The curriculum is based on the belief that nursing is a creative activity that provides human services for the promotion of

health, prevention of illness, and care of the ill. It is interdependent with all other disciplines concerned with health. Nursing knowledge is viewed as a unique synthesis drawn from the humanities and the natural, biomedical, and social sciences. Students use a systems perspective as a conceptual base to nursing. This conceptual approach to nursing incorporates the whole person and his or her environment with the nursing process. Nursing courses include observation and clinical practice in numerous hospitals, community agencies, schools, nursing homes, and physicians' offices throughout the state of Rhode Island.

There are three routes to admission to the College of Nursing baccalaureate program.

1) *Students with no previous college study* begin their preparation in University College with dual enrollment in the College of Nursing. After completion of 37-50 credits (which must include required foundation courses) with a minimum 2.20 overall quality point average and a 2.20 quality point average in the foundation courses, they may apply for confirmed admission to the College of Nursing. Priority is given to students with strong academic records and positive recommendations from faculty in introductory nursing courses.

2) *Students with college study in another major* or some nursing study in another baccalaureate program and a minimum of 45 completed credits, if accepted by the University, may be admitted directly. Students who transfer from another college or university are admitted into clinical nursing courses on a space-available basis. To enroll in clinical nursing courses, transfer students must meet the requirement of a minimum 2.20 quality point average overall and in the foundation courses. Grades from courses taken at the other institution are not included in the student's quality point average.

3) *Registered nurse students* who have completed diploma or associate degree programs are not required to submit scholastic aptitude scores when seeking admission. As adult students who have developed competence in basic subject areas, they may demonstrate their mastery by completing the College Level Examinations sponsored by the College Entrance Examination Board. Advanced credit allowances are based on a review of the candidate's

test scores and preparatory experience. Following direct admission to the college, students have the option of seeking credit by proficiency examination (ACT-PEP exams) in subjects previously studied. They are required to enroll in some upper-division nursing courses and to meet the remaining program specifications. R.N. students must have an active Rhode Island nursing license and malpractice insurance.

The usual time for completion of all requirements for students with no previous college or nursing study is eight semesters and one summer session. All students in the College of Nursing meet all of the General Education requirements of the University, as listed on page 9. Entry into clinical courses is competitive and based on grade point average. A minimum grade of C must be achieved in all required nursing courses. The faculty reserves the right to require withdrawal from the college of a student who gives evidence academically and/or personally of inability to carry out professional responsibility in nursing. The student is limited to 18 credits per semester except by permission of the Dean for special program adjustments or when participating in the Honors Program.

General expenses for students in the College of Nursing are approximately the same as for all other University students. Special items include uniforms, nursing equipment, transportation, and possibly one summer session. The use of an automobile or funds to meet public transportation costs is required for the clinical experiences.

The program is approved by the National League for Nursing and the Rhode Island Board of Nurse Registration and Nursing Education. The graduate is eligible for examination for professional licensure.

Curriculum Requirements

Foundation Courses. The following are required before transfer from University College: CHM 103 (3), 124 (3); FSN 207 (3); MIC 201 (4); NUR 100 (3); PSY 113 (3); ZOO 121 (4), 242 (3), 244 (1); one writing (Cw) course (3).

The following are recommended during the first three semesters: NUR 100 (3); PCL 225 (2); PSY 232 (3); SOC 100 (3); STA 220 (3).

An example of the curriculum plan follows. (Individual programs may vary.)

Freshman Year

First semester: 16 credits

- 4 ZOO 121 Human Anatomy
- 3 SOC 100 General Sociology
- 3 CHM 103 Introductory Chemistry Lecture
- 3 General Education requirement (Cw)
- 3 General Education requirement (A)

Freshman Year

Second semester: 16 credits

- 3 ZOO 242 Human Physiology
- 1 ZOO 244 Human Physiology Laboratory
- 3 CHM 124 Introduction to Organic Chemistry
- 3 PSY 113 General Psychology
- 3 FSN 207 General Nutrition
- 3 General Education requirement (C)

Sophomore Year

First semester: 18 credits

- 3 NUR 100 Health, Illness, Nursing, and the Ecosystem
- 4 MIC 201 Introductory Medical Microbiology
- 3 STA 220 Statistics in Modern Society
- 2 PCL 225 Pharmacology and Therapeutics I
- 3 PSY 232 Developmental Psychology
- 3 General Education requirement (L)

Sophomore Year

Second semester: 16 credits

- 2 PCL 226 Pharmacology and Therapeutics II
- 3 NUR 210 Pathophysiology I
- 3 NUR 230 General Methods and Strategies in Nursing Practice I
- 3 NUR 250 Nursing in Health Promotion
- 1 NUR 235 Practicum in General Nursing Strategies I
- 1 NUR 255 Practicum in Health Promotion Nursing
- 3 General Education requirement (F)

Junior Year

First semester: 15 credits

- 3 NUR 270 Scientific Inquiry in the Practice of Nursing
- 3 NUR 212 Pathophysiology II
- 3 NUR 350 General Methods and Strategies in Nursing Practice II
- 3 NUR 355 Practicum in General Nursing Strategies II
- 3 General Education requirement (A or L or F)

Junior Year

Second semester: 17 credits

- 3 NUR 370 Nursing in Short-Term Health Care
- 3 NUR 375 Practicum in Short-Term Health Care for Adults
- 2 NUR 410 Psychopathology
- 3 NUR 415 Practicum in Mental Health and Psychiatric Nursing
- 3 General Education requirement (A or L or F)
- 3 Restricted elective

Senior Year

First semester: 14 credits

- 3 NUR 420 Family Health Nursing
- 2 NUR 425 Practicum in Family Health Nursing
- 3 NUR 430 Community Health Nursing
- 3 NUR 435 Practicum in Community Health Nursing
- 3 NUR 300 Theories and Issues in Professional Role Development

Senior Year

Second semester: 16 credits

- 3 NUR 445 Practicum in Nursing of Children
- 3 NUR 450 Nursing in Long-Term Health Care
- 4 NUR 455 Practicum in Long-Term Care of Adults
- 6 Two free electives

Required Courses for the Nursing Major.

The following are required for the nursing major: NUR 100 (3), 210 (3), 212 (3), 230 (3), 235 (1), 250 (3), 255 (1), 270 (3), 300 (3), 350 (3), 355 (3), 370 (3), 375 (3), 410 (2), 415 (3), 420 (3), 425 (2), 430 (3), 435 (3), 445 (3), 450 (3), and 455 (4).

General Education Requirements and Electives. The General Education requirements must be completed with the exception that one of the following divisions may be reduced by three credits: Fine Arts and Literature (A), Letters (L), or Foreign Language and Culture (F).

Six credits of free electives are required. With the help of an advisor, students must also choose three credits of restricted electives from an approved list of courses.

A total of 128 credits is required for graduation.

COLLEGE OF PHARMACY



Louis A. Luzzi, *Dean*
Joan M. Lausier, *Associate Dean*

The College of Pharmacy offers a five-year curriculum leading to the Bachelor of Science (B.S.) degree in pharmacy. Beginning with the Class of 1995, a limited number of students will be chosen from the fourth-year class to continue for two more years in a program leading to the Doctor of Pharmacy (Pharm.D.) degree. The college awards two graduate degrees: the Master of Science (M.S.), offered by all departments, and the Doctor of Philosophy (Ph.D.) in pharmaceutical sciences, offered by all departments except Pharmacy Practice. The graduate programs are described in the *Graduate Bulletin*.

Pharmacy

This five-year curriculum is patterned on presently accepted programs of study recommended by the American Association of Colleges of Pharmacy, the American Council on Pharmaceutical Education, and other interested organizations. It is accredited by the American Council on Phar-

maceutical Education and by the University of the State of New York, Division of Professional Education.

It provides preparation for community and institutional pharmacy practice. In addition, students have opportunities through the selection of professional electives to commence a specialization in one of several areas of pharmacy, including hospital, clinical, manufacturing, medical supply servicing, drug analysis, administration, and research.

The satisfactory completion of the degree in pharmacy is one of the prerequisites for a license to practice pharmacy. Licensure is obtained after graduation by successfully completing the examination given by the Rhode Island State Board of Pharmacy or those of other states.

Students requesting transfer from University College to the College of Pharmacy must have at least a 2.00 cumulative quality point average in the basic science courses that are required for transfer. These are, at the end of three semesters, CHM 101, 102, 112, 114, 227, ZOO 111, 121, 242, 244, MTH 131 and MIC 201; at the end of four semesters, the foregoing courses plus CHM 226, 228, STA 307, and BCP 311 (or equivalent courses, where permitted).

A student will not be allowed to proceed into PHP 484, 485, or 490 without at least a 2.00 quality point average in required professional pharmacy courses. A student with less than a 2.00 will not be allowed to take any professional courses not previously taken, but will be allowed to repeat up to 10 credits of pharmacy courses in which he or she received a C or less.

A quality point average of 2.00 in all required professional courses given by the College of Pharmacy is required for graduation with a B.S. or Pharm.D. degree. This is in addition to University grade requirements.

Students in certain other New England states may enroll in pharmacy under the New England Regional Student Program. (See page 21.)

Transfer into the College of Pharmacy from another institution or from other programs at the University is highly competitive. Preference is given to students who have already completed the science courses equivalent to those stated in the curriculum. Freshmen may apply for admission after completing one year of the

preprofessional science courses. Students applying to enter as second-year students should have completed general chemistry (two semesters), general zoology, human anatomy, and basic calculus. Students requesting entrance as third-year students must have completed the above courses as well as organic chemistry (two semesters), microbiology, human physiology, biochemistry, and biostatistics. Students may transfer credits for courses in which they have earned a C or better. Questions concerning the transferability of specific courses should be directed to the Associate Dean of Pharmacy.

Medicinal Chemistry: Professor Panzica, *chairperson*. Professor Abushanab; Assistant Professor Cho; Adjunct Assistant Professor Lalor; Professors Emeriti Bond and C. Smith.

Pharmaceutics: Professor Needham, *chairperson*. Professors Kislalioglu and C. Rhodes; Associate Professors Rosenbaum and Zia; Adjunct Professors Carlin, Kanig, Marshall, Monkhouse, Otterness, Stetsko, and Woodruff; Adjunct Assistant Professors Danish, Dechow, Dedhiya, Rettig, and Rudnic.

Pharmacognosy and Environmental Health: Professor Panzica, *acting chairperson*. Professor Shimizu; Associate Professor C. Chen; Assistant Professor L. Martin; Adjunct Professor Nakanishi; Adjunct Assistant Professor Omar; Professors Emeriti Worthen and Youngken.

Pharmacology and Toxicology: Professor Shaikh, *chairperson*. Professor Swonger; Associate Professors Babson, Chichester, and Rodgers; Adjunct Associate Professors Giambalvo, Kaplan, Levinsky, and Lundgren; Adjunct Assistant Professors Fisher, Jackim, and Malcolm.

Pharmacy Practice: Professor Dudley, *chairperson*. *Division of Pharmacoepidemiology and Administrative Sciences:* Professor Taubman, *director*. Professor N. Campbell; Assistant Professors Larrat and Willey Lessne. *Division of Clinical Pharmacy:* Professor Dudley, *director*. Associate Professors Barbour, Hume, Mattea, and Owens; Assistant Professors Dufresne, Geletko, Kanyok, and Stoukides.

Bachelor of Science Curriculum Requirements

The five-year accredited program for the Bachelor of Science (B.S.) provides time for the General Education requirements as described on page 9. The major portion of the professional program begins in the third year, when basic pharmaceutical and clinical disciplines are introduced.

Each year the curriculum is supplemented by field trips to selected pharmaceutical industries. Students also make use of selected hospital and community pharmacies in Rhode Island and New England for specialty externships and clerkships.

Total credits required starting with the Class of 1995: 168.¹

First Year

First semester: 14 credits

- 3 CHM 101 General Chemistry Lecture I
- 1 CHM 102 Laboratory for Chemistry 101
- 3 A University-approved English communication course except BGS 100²
- 4 ZOO 111 General Zoology
- 3 Elective

First Year

Second semester: 17 credits

- 3 CHM 112 General Chemistry Lecture II
- 1 CHM 114 Laboratory for Chemistry 112
- 3 MTH 131 Basic Calculus I
- 3 A University-approved English communication course except BGS 100²
- 4 ZOO 121 Human Anatomy
- 3 Elective

Second Year

First semester: 17 credits

- 3 CHM 227 Organic Chemistry Lecture I
- 3 ECN 201 Principles of Economics: Microeconomics
- 4 MIC 201 Introductory Medical Microbiology
- 3 ZOO 242 Introductory Human Physiology
- 1 ZOO 244 Introductory Human Physiology Laboratory
- 3 Elective

Second Year

Second semester: 17 credits

- 3 BCP 311 Introductory Biochemistry
- 3 CHM 228 Organic Chemistry Lecture II
- 2 CHM 226 Organic Chemistry Laboratory
- 3 STA 407 Introductory Biostatistics
- 6 Electives

Third Year

First semester: 16–17 credits

- 2 MCH 343 Principles of Medicinal Chemistry
- 3 PCL 327 Introduction to Human Pathophysiology
- 2 PHC 327 Biopharmaceutics
- 3 PHP 349 Pharmacy Administration Principles and Section A
- 3 PHC 340 Physical Pharmacy
- 3 PHC 350 Pharmaceutical Technology
- 1 PHC 360 Pharmaceutical Technology Laboratory or Section B
- 3 MCH 342 Pharmaceutical Analysis
- 3 Elective

Third Year

Second semester: 18–19 credits

- 3 PCG 445 General Pharmacognosy
- 3 PCL 444 General and Clinical Pharmacology and Toxicology I
- 3 PHC 328 Pharmacokinetics
- 3 PHP 351 Pharmaceutical Law and Ethics and Section A
- 3 MCH 342 Pharmaceutical Analysis
- 3 Elective or Section B
- 3 PHC 340 Physical Pharmacy
- 3 PHC 350 Pharmaceutical Technology
- 1 PHC 360 Pharmaceutical Technology Laboratory

Fourth Year

First semester: 19 credits

- 3 MCH 443 Organic Medicinal Chemistry
- 3 FSN 444 Nutrition and Disease
- 3 PCG 446 General Pharmacognosy
- 3 PHP 459 Public Health
- 3 PCL 445 General and Clinical Pharmacology and Toxicology II
- 4 PHP 455 Pharmacotherapeutics I

Fourth Year

Second semester: 19 credits

- 3 MCH 444 Organic Medicinal Chemistry
- 3 PCL 446 General and Clinical Pharmacology and Toxicology III
- 2 PHP 448 Third-Party Prescription Programs
- 4 PHP 456 Pharmacotherapeutics II
- 1 PCL 443 General Pharmacology Laboratory and Section A
- 6 Electives or Section B
- 3 PHC 462 Nonprescription Drugs
- 1 PHC 461 Health-Related Supplies
- 2 PHP 471 Contemporary Pharmacy Practice Laboratory

Fifth Year

First semester: 15 credits

- Section A
- 3 PHC 462 Nonprescription Drugs
- 1 PHC 461 Health-Related Supplies
- 2 PHP 471 Contemporary Pharmacy Practice Laboratory
- 9 Electives or Section B
- 5 PHP 484 Institutional Pharmacy Externship
- 5 PHP 485 Community Pharmacy Externship
- 5 PHP 490 Clinical Pharmacy Clerkship

Fifth Year

Second semester: 15 credits

- Section A
- 5 PHP 484 Institutional Pharmacy Externship
- 5 PHP 485 Community Pharmacy Externship
- 5 PHP 490 Clinical Pharmacy Clerkship or Section B
- 15 Electives

¹ Proficiency in the American Red Cross Standard First Aid and Community CPR is expected of each student prior to graduation. HLT 272 will satisfy this requirement.

² CMS 101 (six credits) may be substituted for the writing requirement.

Doctor of Pharmacy Curriculum Requirements

This clinically oriented curriculum becomes a separate track from the B.S. program in the fifth year. Students in the B.S. program may apply for admission to the Doctor of Pharmacy (Pharm.D.) program no sooner than the fall of the fourth year. Only students in good academic standing who have met all of the prerequisites may apply. In addition to the application form, students must submit a letter of purpose as well as letters of recommendation from individuals who have known the applicant in a professional capacity. Students admitted to the Pharm.D. program will complete the fourth-year curriculum of the B.S. program in Section B. The students will spend the fifth year in advanced clinical course work. The summer after the fifth year is spent fulfilling externship requirements for licensure, and the sixth year is spent in clerkship rotations. Graduates of the Pharm.D. program are eligible to sit for the national licensing examination.

A total of 207 credits is required for graduation.

Fifth Year

First Semester: 17 Credits

- 3 PHP 511 Advanced Pharmacotherapeutics I
- 3 PHC 535 Pharmacokinetics
- 4 PHP 561 Advanced Human Pathophysiology I
- 3 PHP 411 Biostatistics II
- 1 PHP 581 Seminar
- 3 Elective

Fifth Year

Second Semester: 16 Credits

- 3 PHP 512 Advanced Pharmacotherapeutics II
- 3 PHP 542 Drug-Induced Diseases
- 4 PHP 562 Advanced Human Pathophysiology II
- 1 PHP 544 Physical Assessment
- 6 Electives

Sixth Year

Summer Session: 5 Credits

One of the three rotations below:

- 5 PHP 582 Seminar

Three of the four rotations below:

- 5 PHP 484 Institutional Pharmacy Externship
- 5 PHP 485 Community Pharmacy Externship
- 2 x 5 PHP 590 Advanced Clinical Pharmacy Clerkship

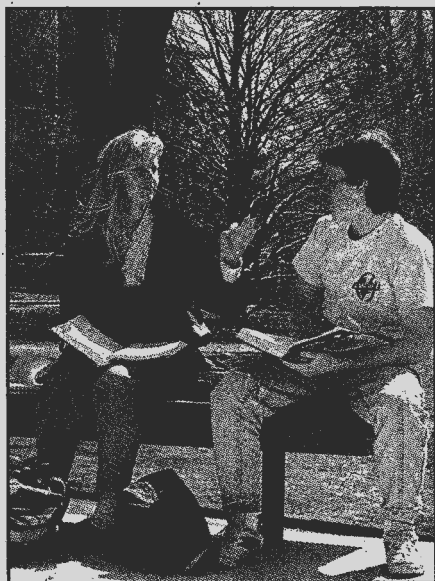
Sixth Year

Second Semester: 15 Credits

- 3 x 5 PHP 590 Advanced Clinical Pharmacy Clerkship



COLLEGE OF RESOURCE DEVELOPMENT



Robert H. Miller, *Dean*
Patrick A. Logan, *Interim Associate Dean*

The College of Resource Development offers undergraduate majors leading to two degrees: the Bachelor of Science (B.S.) degree and the Bachelor of Landscape Architecture (B.L.A.) degree. The following majors are offered within the Bachelor of Science degree program: animal science and technology, aquaculture and fishery technology, dietetics, environmental management, food science and nutrition, plant science, resource economics and commerce, soil and water resources, urban affairs, urban horticulture and turfgrass management, and wildlife biology and management.

Options have been developed within certain majors to help students prepare for specific graduate study, further professional training, or specialized careers at the B.S. level. Entering freshmen and transfer students with fewer than 24 credits are admitted to University College, and may choose a major in the College of Resource Development at that time. Students may choose an option when they transfer to the College of Resource Development or at a later time.

Undergraduate students from any college may develop a minor from one of the majors offered by the College of Resource Development. Details can be worked out with an appropriate faculty advisor. In addition, most departments have an internship program for combining hands-on professional experience with academic credit.

Students majoring in animal science, plant science, or natural resources science who are interested in careers as secondary-school teachers in agricultural education and natural resources may meet the Rhode Island Department of Education certification requirements with appropriate advisement. The 42 credits required for teacher certification in agriculture can be incorporated into the undergraduate degree program as supporting or free electives. See teacher education programs, pages 13-14, for details. Students interested in teacher certification should contact Associate Professor Mallilo as a second advisor.

Graduate programs leading to the Master of Science (M.S.) degree are offered in most departments. Several programs lead to the Doctor of Philosophy (Ph.D.) degree. The professional degree of Master of Community Planning (M.C.P.) is offered by the Department of Community Planning and Area Development. Detailed descriptions of the several graduate programs appear in the *Graduate Bulletin*.

Faculty members in the College of Resource Development differ from those in the other colleges in that most hold a joint appointment with the Rhode Island Agricultural Experiment Station and the Rhode Island Cooperative Extension. These units represent the formal research and public service functions of the college and are funded with federal and state monies.

Faculty

Community Planning and Area Development: Professor Feld, *director*. Associate Professors Atash, Feldman, H. Foster, and Jensen; Adjunct Professor Thomas and Kumeakwa; Adjunct Associate Professor Shaw; Adjunct Assistant Professors Flynn, Motte, Parella, Ruggerio, Schatz, Westcott, and Winsor.

Fisheries, Animal and Veterinary Science: Professor Nippo, *chairperson*. Professors McCreight, R. Rhodes, and Wolke; Associate Professors Bradley, DeAlteris, Mallilo, Recksiek, Rice, and Wing (equiv.); Adjunct Professor Kaiser; Adjunct Associate Professors Bodammer, Fleming, Klein-MacPhee,

and Pechenik; Adjunct Assistant Professors Balmforth, Blott, and Ganz.

Food Science and Nutrition: Professor Traxler, *chairperson*. Professors M. Caldwell, Constantinides, C. Lee, Rand, and Simpson; Associate Professors English, Eshleman, Gerber, Greene, and Patnoad; Assistant Professor Fischl; Adjunct Professor Josephson; Adjunct Associate Professor Sebelia; Adjunct Assistant Professor Gianquitti.

Landscape Architecture: Associate Professor Simeoni, *coordinator*. Associate Professor Hanson; Assistant Professor Green; Adjunct Assistant Professor Weygand.

Natural Resources Science: Professor W. Wright, *chairperson*. Professors J. Brown, Gold, Golet, Husband, and R. Miller; Associate Professors August and Eddleman; Assistant Professor Gamerding; Adjunct Associate Professor Groffman; Adjunct Assistant Research Professors F. and P. Buckley; Adjunct Assistant Research Wildlife Biologist DeRagon.

Plant Sciences: Professor Hull, *chairperson*. Professors Casagrande, N. Jackson, LeBrun, Logan, and Mueller; Associate Professors Alm, Chandlee, Duff, Englander, Krul, Mather, Shaw, and W. Sullivan; Assistant Professors B. Maynard and Ruemmele; Adjunct Professor Taylorson; Adjunct Associate Professor Ginsberg; Adjunct Assistant Professors Bascom, Dellaporta, Gettman, Mallon, and E. Roberts.

Resource Economics: Professor Weaver, *chairperson*. Professors Anderson, Gates, Grigalunas, Opaluch, Sutinen, and Tyrrell; Associate Professors Feeney, Swallow, and Wilchens; Assistant Professor Wessells; Adjunct Professor Aguero; Adjunct Assistant Professor Andersen.

Bachelor of Landscape Architecture Curriculum Requirements

Landscape architecture is a curriculum offered by the Department of Plant Sciences, which leads to the Bachelor of Landscape Architecture (B.L.A.) degree. URI's curriculum is accredited by the American Society of Landscape Architects. It is designed to educate undergraduates for professional careers in the public and private sectors of landscape architecture which involve the design, planning, preservation, and restoration of the land-

scape by applying both art and science to achieve the best use of our land resources.

Landscape architects engage in the design and planning of parks, recreation areas, new communities and residential developments, urban spaces, pedestrian areas, commercial centers, resort developments, transportation facilities, corporate and institutional centers, industrial parks, and waterfront developments. Their professional skills are used to undertake natural, historic, and coastal landscape preservation projects.

The requirements of the curriculum include preparation in the basic arts and sciences. The major includes 52 credits of program courses; 24 credits of supporting requirements; and 18 credits of approved supporting electives through which a student may obtain additional preparation in plant sciences, art, community planning, or natural resources. A minimum of 130 credits is required for graduation.

Landscape architecture is an oversubscribed program. Accreditation standards regarding staff and facilities limit the present student acceptance into the upper-division major to 20 per year and requires a competitive admissions policy. Students will be reviewed twice during the course of their studies, once for admission into the lower-division design sequence and again for acceptance into the upper-division B.L.A. major. A cumulative quality point average requirement is determined each year for both of these reviews. In recent years, the cutoff has ranged from 2.40 to 2.60 for those accepted to either the lower or the upper division.

Admission into the lower-division design sequence courses (LAR 243 and 244) requires departmental approval. Approximately 50 percent of the openings are filled by students entering as incoming freshmen or transfer students through the Office of Undergraduate Admissions. These students will begin the design sequence in the fall semester of their second year at URI. The remaining openings are filled by matriculated students through an application accompanied by a transcript of grades. The applications and transcripts will be evaluated in February of each year for acceptance into the lower-division courses in the coming fall.

Acceptance into the upper-division (junior-senior) landscape architecture major will be based upon submission and review of a portfolio of lower-division work, academic transcripts, and a written essay.

A maximum of 20 students per year will be accepted into the upper-division curriculum. Eligible applicants for the upper division are students enrolled in LAR 244, repeat applicants, and students who wish to transfer directly into the upper division from other landscape architecture programs. Only students who have completed comparable lower-division courses in programs that have been accredited by the American Society of Landscape Architects will be allowed to compete for these upper-division positions. Such transfer applicants must first be accepted into the University by the Office of Undergraduate Admissions and have their portfolio, transcripts, and essays submitted to the coordinator of the landscape architecture program before February 15 preceding the fall semester in which they wish to enroll. Students will be notified of their acceptance into the upper-division program before preregistration for fall classes.

Interested students should discuss entrance probabilities with the program advisor.

Bachelor of Science Curriculum Requirements

All B.S. programs offered in the college require a minimum of 130 credits for graduation, except for resource economics and commerce, which requires a minimum of 125 credits. Required courses come from three categories: General Education requirements (36 credits); program requirements (77–85 credits); and free electives (9–12 credits).

Basic General Education requirements for all students in the B.S. curriculum are outlined below. Individual programs may require that specific courses be selected.

English Communication (6 credits). Three credits in written communication from courses in Group Cw, and three credits in oral communication from communication studies.

Mathematics (3 credits)

Natural Sciences (6 credits)

Social Sciences (6 credits)

In addition, 15 credits must be chosen from:

Letters (3–6 credits)

Fine Arts and Literature (3–6 credits)

Foreign Language and Culture (3–6 credits)

Total: 36 credits.

The major requirements include introductory professional courses, basic sciences, concentration courses, and supporting electives. Advisory materials for each major include a list of these required courses and are available in the Office of Student Affairs. Working closely with their faculty advisors, students can shape their major to accommodate individual needs and interests.

Free elective courses are available in each major to give students the opportunity to study in areas that are unrelated to their principal area of interest.

Impacted Status of Programs in Natural Resources Science. Due to limited staff and facilities, the total number of transfers from University College to the undergraduate majors offered by the Department of Natural Resources Science must be limited to about 30 students each year. These majors are: environmental management, soil and water resources, and wildlife biology and management. The competitive admission policy that has been established to deal with student demand consists of required courses, a minimum number of credits, and a weighted quality point average requirement that is determined each year.

Before applying for admission to the College of Resource Development in a natural resources science major, students must complete at least 24 credits of course work, including at least three of the following basic science courses: NRS 100; BOT 111 or ZOO 111 or BIO 102; GEL 103; CHM 103, 105 or CHM 101, 102; and MTH 131. The weighted quality point average emphasizes the grades received in the required basic science courses. It is likely that the cutoff for the weighted quality point average will be in the range of about 2.40 to 2.60.

Applications for admission to one of the majors in natural resources science for the coming academic year must be received by the last day of January. Applications are evaluated only once each year, in early February. Applicants will be notified by the last day of February if they are accepted. Students who wish to begin the major at another time during the year must petition the Natural Resources Science Curriculum Committee for permission to do so. Admission will be limited to those students with the highest weighted quality point averages. Although those below the

cutoff may reapply the following year, they are strongly advised to choose a major outside natural resources science and to select new courses appropriate to that major for the fall. Students who have not satisfied entrance requirements may petition the NRS Curriculum Committee for a waiver of those requirements. Petition forms are available in the main office of the Department of Natural Resources Science.

Transfer students from other institutions must meet the University requirement of a quality point average of 2.50, and must have completed at least three of the required basic science courses listed above.

To ensure that natural resources science majors have access to required courses, a strict registration policy will be followed. Highest priority for NRS courses will be given to natural resources science majors. Students in other majors will be accommodated on a space-available basis.

Animal Science and Technology

This major, offered by the Department of Fisheries, Animal and Veterinary Science, is designed for students interested in applied animal science careers. Options are available to students interested in veterinary medicine, animal sciences, and laboratory animal science. Those students who intend to use their study in animal science as credentials for secondary-school teaching should also enroll in this major.

The major requires a minimum of seven credits in introductory animal science and genetics; eight credits in zoology and botany; eight credits in inorganic chemistry; and three credits in mathematics. Also required are nine to 12 credits in basic science, 24 credits of concentration courses, and 26–29 credits of supporting electives approved for the major.

Animal Management Option. This option provides a broad basis in animal science. A variety of scientific disciplines, together with their practical application to animal management, is available. Students usually seek employment in animal agriculture or in the agri-industry.

In addition to the requirements of the major, option students must complete six credits in animal management for the concentration. The remaining credit require-

ments in the basic sciences, concentration, and supporting electives must be selected from courses approved for this option.

Animal Science Option. This option includes animal nutrition, physiology, genetics, and disease. Students will normally emphasize one or more of these areas. A strong preparatory background in the basic sciences is needed. Students in this option seek employment in technical areas and/or continue their studies in specialized graduate programs.

In addition to the requirements of the major, option students must complete the following basic science requirements: four to eight credits in organic chemistry, three credits in introductory calculus, and four credits in microbiology. A course in animal anatomy and physiology is required in the concentration. The remaining credit requirements will be selected from the concentration courses and supporting electives approved for this option.

Laboratory Animal Option. Research techniques and procedures for animal care are emphasized along with a strong background in the sciences. Students with this training and animal experience would be employed in research and teaching facilities as animal technicians, animal technologists, supervisors of animal technicians, and assistant research project leaders.

In addition to the requirements of the major, option students must complete the following basic science requirements: four to eight credits in organic chemistry, three credits in introductory calculus, four credits in microbiology, and three credits in statistical methods. Six credits in animal management, three credits in animal anatomy and physiology, and three credits of general nutrition are required in the concentration. The remaining credit requirements will be selected from the concentration courses and supporting electives approved for this option.

Preveterinary Option. This option prepares students for admission to veterinary schools offering the D.V.M. degree and requires a demonstrated capability in the basic sciences. Because admission requirements among schools are not totally uniform and are subject to change, students should determine specific requirements of the schools in which they are interested. Those who are not accepted for veterinary

training will be well prepared to pursue graduate programs in animal physiology and health.

In addition to the requirements of the major, option students must complete the following basic science requirements: eight-credit, two-semester sequence in organic chemistry, three credits in biochemistry, four credits in microbiology, eight credits in general physics, three credits in introductory calculus, and three credits in intermediate calculus or statistical methods in research. Three credits in animal anatomy and physiology are required in the concentration. The remaining credits will be selected from the concentration courses and supporting electives approved for this option.

Aquaculture and Fishery Technology

This major, offered by the Department of Fisheries, Animal and Veterinary Science, prepares students for professional or technical careers in aquaculture or fisheries-oriented occupations. It is sufficiently broad to allow for specialization in either fisheries or aquaculture science and technology. Students who demonstrate superior ability in the basic sciences and wish to continue their professional training can select a course curriculum that will both prepare them for graduate school and provide a broad overview in fisheries and aquaculture science and technology.

The major requires a minimum of nine credits in introductory professional courses including natural resource conservation, fisheries or aquaculture, and resource economics; six to eight credits in animal and plant biology; four credits in general chemistry; four additional credits in general or organic chemistry; and nine to 12 additional credits in basic science selected from an approved course list in the Departments of Botany, Chemistry, Computer Science and Statistics, Mathematics, Physics, and Zoology. In addition, the major requires 24 credits in concentration courses at the 300 level or above, and 18 credits of the concentration courses must be selected from courses offered by the Departments of Fisheries, Animal and Veterinary Science, Food Science and Nutrition, Marine Affairs, Resource Economics, and Zoology and by the Graduate School of Oceanography. Finally, the program requires 30–36 credits of supporting electives selected

from an approved list of courses in the Departments of Fisheries, Animal and Veterinary Science, Botany, Food Science and Nutrition, Marine Affairs, Natural Resources Science, Resource Economics, and Zoology and by the Graduate School of Oceanography.

Dietetics

The major in dietetics, offered by the Department of Food Science and Nutrition, is approved by the American Dietetic Association (ADA) and is required of students planning to become Registered Dietitians. This program is designed to provide the student with an academic background in clinical, community, and administrative dietetics. Students are encouraged to use supporting elective and free elective courses to study disciplines related to the field.

The major requires a minimum of seven credits in professional introductory courses in food science and nutrition; a minimum of 22 credits in basic science courses including introductory chemistry, organic chemistry, biochemistry, human anatomy, human physiology, and microbiology; a minimum of 34 credits in required concentration courses that cover the areas of advanced nutrition, nutrition and disease, nutrition education, nutrition in the life cycle, and food service management; and a minimum of 18 credits in supporting electives selected from an approved list of courses. Students are encouraged to see an academic advisor as soon as possible to discuss specific degree requirements.

After completing the Bachelor of Science requirements, the student can qualify for the professional title of Registered Dietitian, R.D., by completing experience requirements and passing a national examination. The experience requirements can be met by completing one of the following programs: an ADA-accredited dietetic internship program available to students on a competitive basis in major health care facilities nationwide; or an ADA-approved PreProfessional Practice Program (AP4) available to students on a competitive basis in health care facilities and colleges and universities nationwide. The Department of Food Science and Nutrition has an ADA-approved AP4 program to which graduates of the dietetics program can apply.

Experience programs may be combined with graduate programs in universities leading to an advanced degree. Students completing academic and experience requirements become eligible to take the national registration examination administered through the Commission of Dietetic Registration of the ADA.

Environmental Management

The major in environmental management, offered by the Department of Natural Resources Science, prepares undergraduate students for professional careers in the public and private sectors of natural resources management. Flexible course requirements allow students to develop individual areas of concentration and prepare for a variety of positions in environmental management after graduation. This major is also suitable for students who wish to become certified as teachers of environmental science and natural resources at the secondary level. In addition, the program provides a solid background for graduate study in several more specialized environmental science disciplines. Environmental management majors may meet the educational requirements for state and federal employment as biologists, natural resource specialists, environmental scientists, and other classifications.

The major requires nine credits of introductory professional courses, which include natural resource conservation, resource economics, and introductory soil science. As part of the basic science requirements, environmental management majors must complete four credits in general botany, four credits in general zoology, three credits in introductory ecology, four credits in introductory physics, four credits in physical geology, four credits in inorganic chemistry, four credits in organic chemistry, three credits in introductory calculus, and three credits in introductory statistics. Required concentration courses (24–26 credits) must be taken at the 300-level or above; at least 18 credits must be selected from the Department of Natural Resources Science. (Please note that internships, seminars, and special projects may not be counted toward the concentration.) In addition, two courses must be selected from each of the following groups: forestry and wildlife management, soil science, and water resources. The remaining concentration credits

should be selected from the Department of Natural Resources Science or from an approved list of courses. Supporting electives (23–25 credits) must be selected from an approved list of courses mostly at the 300 and 400 level.

Food Science and Nutrition

This major prepares students for professional or technical careers in food science and nutritional science. This program offers several academic possibilities, and students should choose the direction that challenges and excites their interests. Students are urged to engage in individually designed special projects and internships to gain experience and expertise in the field.

Food science is the application of science and technology to the processing, preservation, and distribution of food. It is the key to converting raw food materials into a wide variety of preserved and processed foods. It deals with the processing of existing food supplies to ensure their quality and safety, developing new food products and preserving food to feed a rapidly increasing world population, and improving the nutritional level of diets throughout the world. It is possible to complete minimum educational standards for food science as officially recognized by the national Institute of Food Technologists. Students choosing this direction are encouraged to focus on career opportunities such as quality assurance, research and development, fermentation technology, and seafood technology.

Nutritional science is the study of the action and interaction of nutrients and other substances in food in relation to health and disease. The body's requirements for nutrients are also studied, along with the social, economic, cultural, and psychological implications of food and eating. Students choosing this direction should consider focusing on nutrition and exercise or on research, or use it as preparation for medical school.

The major requires a minimum of six credits in general nutrition and introductory food science; six to seven credits in animal biology and physiology; eight credits in general chemistry; seven credits in organic chemistry and biochemistry; and four credits in microbiology. The concentration courses include three credits in advanced human nutrition, two credits in

computer applications in food science and nutrition, three credits in food sanitation, and 12 additional credits based on the student's interest. Also required are courses in statistical methods in research, technical writing, and applied foods. An additional 24–25 credits are selected from an approved list of courses, mostly at the 300 and 400 levels. There are 12 credits of free electives.

Plant Science

Continued growth of the human population and associated environmental changes present formidable challenges to the continued supply of quality food, fiber, and renewable energy sources. Regional and local constraints imposed by the encroachment of a growing urban society into agricultural and natural ecosystems present continual challenges to identify an acceptable balance between economic and environmental concerns. Well-educated plant scientists are needed to meet these challenges. This major provides students with a strong foundation in basic plant biology as preparation for graduate-level training to pursue careers in research or education or, alternatively, as preparation for employment in technical support positions in plant-related academic or industrial research programs and in commercial plant biotechnology. Instruction in the traditional areas of plant structure and function, genetics, physiology and biochemistry, pathology, ecology, and taxonomy is available. Offerings in entomology provide a strong background for understanding and managing natural parasites and predators of plants as well as pest biocontrol strategies. While providing a general education in the plant sciences, the major allows for specialization in the biology of plant communities, symbiology, and plant molecular biology. The program in biology of plant communities provides a balanced study of plant-dominated ecosystems ranging from natural plant communities to constructed landscapes to intensely managed agroecosystems. The program in symbiology focuses on the interactions between plants and biotic and abiotic factors in the environment, including how plants respond to those influences from the whole plant level to the cellular and molecular level. The program in plant molecular biology incorporates basic train-

ing in genetic engineering and molecular biology to prepare the student for a research or technical support career in plant genetics or agricultural biotechnology.

The major requires 20–28 credits in the basic sciences; 30 credits in foundation courses required of all students in the major; 15 credits in concentration courses; 9–20 credits in supporting electives selected from an approved list of courses in biochemistry and biophysics, botany, chemistry, computer science, microbiology, natural resources science, plant sciences, statistics, and zoology; and 9–12 credits in free electives. Advisors should be consulted early to ensure that programs are tailored to the specific needs and interests of the individual student.

Resource Economics and Commerce

This major provides students with a broad education focused on resource economics, economics, and natural resources sciences. Students are prepared to pursue a wide variety of careers in the public and private sectors. In the private sector, careers can focus on the production, marketing, and distribution of natural resource commodities such as fisheries and agricultural products, timber, and petroleum, or on recreation and tourism. The major can also prepare the student for working with the conservation and management of natural resources at the state and national level, for advanced professional programs in community or urban planning or law, or for graduate study in resource and agricultural economics.

REN 105 and NRS 100 are prerequisites for this major, which requires a total of 125 credits. Ten credits in basic sciences are required, including four credits in general chemistry and six credits in general biology. Fifteen credits are required in supporting sciences including three credits in computer science and six credits in mathematics, physics, genetics, plant physiology, population biology, introductory ecology, microbiology, general and organic chemistry or physical geology. The remaining six credits in supporting sciences can be selected from courses in applied biology, oceanography, mathematics, chemistry, computer science, or statistics. Introductory calculus is strongly suggested. Twenty-four credits in concentration

courses are required at the 300 level or above, including 15 credits in resource economics and three credits in microeconomic theory.

Thirty-one credits are required in supporting electives, which must include six credits in communication skills. The student's total program of study must include at least six credits in communication studies. This requirement can be satisfied with either the General Education requirement for English communication or the supporting electives requirement for communication skills. The remaining credits in concentration courses and supporting electives should be selected in consultation with a faculty advisor.

Students have considerable flexibility in choosing courses in the College of Resource Development and other colleges at the University. All students are required to take sufficient course work in the physical and biological sciences to gain familiarity with the resource area in which they are interested.

Students interested in water resources, for example, would select appropriate courses from natural resources science and chemistry. Students interested in fisheries marketing and trade should select course work in business, fisheries science and technology, and food science and nutrition. Students intending to pursue graduate studies in resource economics or economics should select course work in economic theory, mathematics, and statistics.

Soil and Water Resources

The major in soil and water resources, offered by the Department of Natural Resources Science, is designed to meet the growing demand for training in the science and management of land and water resources. Options in soil science and water resources provide in-depth training in specific, career-related disciplines.

Soil Science Option. This option is concerned with the soil system as a natural body. It deals with the physical, chemical, biological, and morphological properties of soils, and their relationship to soil-related land use activities. With proper course selection, students are eligible for professional certification by the American Society of Agronomy and the Soil Science Society of America. Soil science students

learn the practical application of soils information through courses in soil and water analysis, soil conservation and land use, and soil conservation technology.

The soil science option provides a strong background for work in state and federal regulatory agencies or consulting firms addressing land use or environmental contamination issues. Training in soil science also provides excellent preparation for graduate study.

This option requires nine credits of professional courses, which include natural resource conservation, resource economics, and introductory soil science. As part of the basic science requirements, soil science students must complete four credits in general botany, four credits in general zoology, three credits in introductory ecology, four credits in introductory physics, four credits in physical geology, four credits in geomorphology, four credits in inorganic chemistry, four credits in organic chemistry, three credits in introductory calculus, and three credits in introductory statistics. Required concentration courses (29–33 credits) include at least 15–16 credits selected from soil morphology practicum, soil conservation and land use, soil and water conservation technology, soil morphology and mapping, plant nutrition and soil fertility, soil-water relations, fate of organic chemicals in soils and sediments, microbial ecology of soils and sediments, and soil genesis and classification; eight to 10 credits (courses not selected above may also be used in this category) must be taken from GIS methods in environmental management, wetland ecology, wetlands and land use, hydrology and water management, or hydrogeology; and six to seven credits must be selected from introduction to forest science, fundamentals of forest management, agricultural plant science, arboriculture, or vegetable science. Supporting electives (13–17 credits) must be selected from approved lists or from remaining concentration electives.

Water Resources Option. This option provides a broad background in the basic biological and physical sciences as well as instruction in the principles of managing water for all human benefits. While the option is designed to prepare students for employment or graduate study in the field of water resources, flexibility in course selection permits students to develop individual areas of concentration and to qualify for employment in other natural

resources fields. The option is intended for those interested in wetland ecology, forest hydrology, water resource planning, and water pollution abatement.

This option requires nine credits of introductory professional courses, which include natural resource conservation, resource economics, and introductory soil science. As part of the basic science requirements, water resources students must complete four credits in general botany, four credits in general zoology, three credits in introductory ecology, four credits in introductory physics, four credits in physical geology, four credits in geomorphology, four credits in inorganic chemistry, four credits in organic chemistry, three credits in introductory calculus, and three credits in introductory statistics. Required concentration courses include at least 15 credits selected from wetland ecology, wetlands and land use, soil and water conservation technology, hydrology and water management, fate of organic chemicals in soils and sediments, microbial ecology of soils and sediments, water in the environment, hydrogeochemistry, hydrogeology, and limnology; the remaining credits must be selected from wetland wildlife management, GIS methods in environmental management, soil conservation and land use, soil morphology and mapping, soil-water relations, water pollution microbiology, phycology, advanced hydrogeology, or aquatic entomology. Supporting electives (14–15 credits) must be selected from approved lists or from remaining concentration electives.

Urban Affairs

The major in resource development in the urban environment is offered through the Department of Community Planning and Area Development in the College of Resource Development as part of the interdisciplinary Urban Affairs Program (see page 12). It provides students with an understanding of how human and natural resources pertain to urban affairs. Training deals with problems related to natural resources in contemporary society. With the help of advisors, students may develop individual programs flexible enough to accommodate their varying interests.

The major requires three credits of introductory work in urban affairs and 15 additional credits selected from courses approved for this level. Basic science re-

quirements include six to eight credits in animal and plant biology, four credits in general chemistry, four additional credits in chemistry, physics, or natural science, and three credits in algebra/trigonometry. In the concentration, the major prescribes four groups of courses and the minimum credits required for each group. Eighteen of these credits will apply to the Urban Affairs Program core requirement. Supporting electives will be selected from recommended courses including 18 credits in resources science or management, nine credits in social sciences, nine credits in communication, and 15–17 credits in free electives.

Urban Horticulture and Turfgrass Management

The major in urban horticulture and turfgrass management is intended to educate students in the sciences, both natural and social, in preparation for professional careers in the many fields of environmental horticulture. Graduates of this program may pursue careers as landscape contractors; golf course superintendents; directors of park systems and arboreta; proprietors of garden centers and floral shops; plant propagators; nurserymen; vegetable and fruit growers; technical representatives for seed, equipment, and chemical companies; managers of lawn service firms; and horticultural therapists, to name some of the opportunities available. Others may enter graduate school and pursue careers in research and education in both public and private institutions. This program has as its unifying theme the culture and use of plants that enhance the human environment.

Depending on the area of specialization, graduates can meet the standards of several certification organizations. Graduates specializing in turfgrass management qualify for certification as turfgrass managers or turfgrass specialists with the American Registry of Certified Professionals in Agronomy, Crops, and Soils, Ltd. (ARPACS), of the American Society of Agronomy. These same graduates also meet the requirements for registration with the Golf Course Superintendents Association of America. Graduates specializing in horticulture therapy qualify for registration with the American Horticultural Therapy Association.

The major requires 24–25 credits of pre-professional courses, including six in General Education; 21–24 credits in concentration courses; 39–43 credits in supporting electives selected from approved course lists in the student's area of interest with permission of the advisor; and 12 credits of free electives. Most supporting electives are at the 300 or 400 level, but certain lower-level courses may be acceptable if approved by an advisor. Included among these electives are business and management courses in the Department of Resource Economics, as well as advanced offerings in plant sciences, botany, and soil science in the Department of Natural Resources Science.

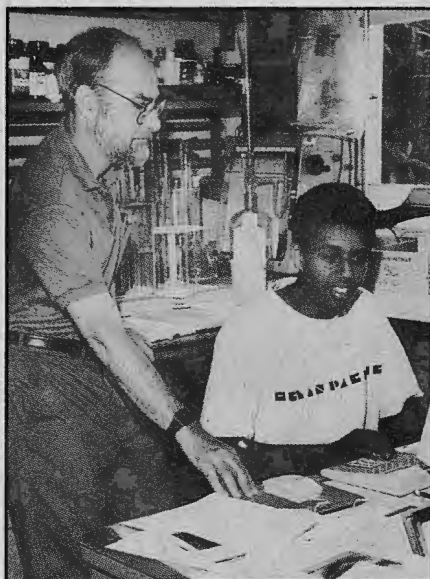
Wildlife Biology and Management

The major in wildlife biology and management, offered through the Department of Natural Resources Science, prepares students for professional careers in the public and private sectors of wildlife biology. In addition, the major provides a solid background for graduate study. Wildlife biologists are professionals concerned with the scientific management of the earth's wildlife species and their habitats. Wildlife biologists work in the areas of preservation, conservation, and management of wildlife species. Graduates can become Certified Wildlife Biologists (CWBs) who are recognized by the Wildlife Society, an international professional organization. In addition, wildlife majors meet the educational requirements for state and federal employment in the wildlife profession.

The major requires nine credits of professional courses, which include natural resource conservation, resource economics, and introductory soil science. As part of the basic science requirements, wildlife majors must complete four credits in general botany, four credits in general zoology, three credits in introductory ecology, four credits in introductory physics, four credits in physical geology, four credits in inorganic chemistry, four credits in organic chemistry, three credits in introductory calculus, and three credits in introductory statistics. Required concentration courses (22–23 credits) include: three credits in introductory forestry; three credits in principles of wildlife management; four credits in field botany and taxonomy; six to seven credits in field ornithology, biol-

ogy of mammals, vertebrate biology, or animal behavior; three to four credits in fundamentals of forest management, wetland wildlife management, wetland ecology, or fishery science; and three credits in either wildlife biometrics or introduction to computing. Supporting electives (26–27 credits) must be selected from approved lists and include the following upper-division course work: three credits in botany; three credits in zoology; six credits in resource policy or administration, environmental law, or land use planning; and six credits in communications.

COURSES OF INSTRUCTION



Permanent undergraduate courses offered at the University of Rhode Island are listed on the following pages by subject in alphabetical order. If any subject cannot be located readily, refer to the Index. Courses numbered 001-099 are prefreshman and special undergraduate courses, and do not carry bachelor's degree credit. Those numbered 100-299 are lower-division undergraduate courses, and those numbered 300-399 are upper-division undergraduate courses. The 400-level courses are generally limited to juniors and seniors majoring in that field, but are open to other advanced undergraduates and to graduate students with permission.

The 500-level courses, listed in this bulletin by course title only, are graduate courses with a bachelor's degree usually a prerequisite, but qualified seniors and honors students are admitted with permission. For a full description of 500-level courses at the 600 and 900 levels, see the *Graduate Bulletin*.

Courses with two numbers—e.g., ACC 201, 202—indicate a year's sequence; the first course is either a prerequisite for the second, or at least the two cannot be taken in reverse order without special permission. If a course is also offered by another department, this information appears fol-

lowing the course number. The roman numeral indicates the semester the course will be offered. SS means the course is offered during the Summer Session. The arabic numeral indicates the credit hours. Distribution of class hours each week is in parentheses. S/U credit signifies a course in which only satisfactory or unsatisfactory grades are given. The instructor's name follows the course description. Courses that meet the General Education requirements are designated with a letter in parentheses indicating the appropriate group, as follows:

- (A) Fine Arts and Literature
- (F) Foreign Language and Culture
- (L) Letters
- (C) English Communication (General)
- (Cw) English Communication (Written)
- (M) Mathematics
- (N) Natural Sciences
- (S) Social Sciences

The schedule of courses is issued by the Office of the Registrar immediately before the early registration period for each semester and again at least two weeks before the first week of classes. The schedule of courses lists the specific courses to be offered that semester with the time of meeting, location, and instructor assigned for the section.

Accounting (ACC)

Chairperson: Professor Schwarzbach

201, 202 Elementary Accounting I, II (I and II, 3 each) 201: Basic concepts and systems used in financial accounting for business organizations. 202: Basic techniques and systems used by management accountants in budgeting, cost accounting, cost analysis and control. (Lec. 3) Staff

311, 312 Intermediate Accounting I, II (I and II, 3 each) 311: Theoretical aspects of accounting principles, emphasis on current and fixed assets and the corporate structure. 312: Continuation including investments, liabilities, financial statements, application of funds, cash flow, and price-level impacts. (Lec. 3) Pre: 202. Staff

321 Cost Accounting (I, 3) Cost and managerial accounting systems and concepts including cost allocation, actual and standard cost systems, cost and profit planning, and control systems. (Lec. 3) Staff

371, 372 Directed Study in Accounting (I and II, 1-3 each) Advanced work under the supervision of a staff member arranged to suit the individual requirements of the student. (*Independent Study*) Pre: permission of instructor. Staff

413 Contemporary Accounting Issues (II, 3) Interpretation of financial data. Case studies of current accounting theory in selected annual corporate reports. (Lec. 3) Pre: 312 or permission of instructor. Not for graduate credit in accounting. Staff

415 Accounting Computer Systems (I and II, 3) Accounting information systems and use of the computer for decision making; emphasis on sources of information and employment of analytical tools in solving accounting problems. (Lec. 3) Pre: 312, 321, or permission of instructor. Staff

431 Advanced Accounting (I, 3) Accounting principles and policies for governmental and nonprofit organizations; multinational and multidivisional organizations, partnerships, and other complex organizational structures. (Lec. 3) Pre: 312. Staff

443 Federal Tax Accounting (II, 3) Federal laws, regulations, and other authorities affecting taxation of individuals. (Lec. 3) Pre: 202. Staff

461 Auditing (I, 3) Auditing standards, procedures, programs, working papers, and internal control. (Lec. 3) Pre: 312. Staff

535 Advanced Problems in Accounting (II, 3)

544 Taxation of Corporations and Shareholders (II, 3)

562 Advanced Auditing (II, 3)

Adult and Extension Education (ADE)

Program Director: Professor McCreight

488 Methods and Materials for Adult and Extension Education (I and II, 3) Techniques utilized in working with large and small groups. Hardware and software used effectively in adult and extension education identified and demonstrated. Communications in extension education studied in depth. (Lec. 3) Mallilo

491, 492 Special Problems in Adult Education (I and II, 1-3 each) Specialized problems in adult and extension education. Seminars or supervised individual projects. (*Independent Study*) Pre: permission of instructor. Staff

African and Afro-American Studies (AAF)

Director: Associate Professor Hamilton

150 Introduction to Afro-American History See History 150.

201 Introduction to the Black Experience (I, 3) Interdisciplinary exploration of some of the pivotal themes and issues in the study of peoples of African descent. (Lec. 3) Staff

202 Introduction to Afro-American Culture (II, 3) Interdisciplinary survey of the social origins of Afro-American culture. (Lec. 3) Gititi

247 Introduction to Pan-African Literature
See English 247.

248 Afro-American Literature from 1900 to Present
See English 248.

250 (or APG 250) Africanity (I and II, 3) Multidisciplinary survey that seeks to analyze the factors of unity and diversity of African culture through the examination of language, art, music, belief systems, world views, and social organizations within various African civilizations. (Seminar) Pollnac and Staff (F)

300 Special Topics in African and Afro-American Studies (I or II, 3) Selected contemporary topics, problems, issues, and individuals from the field of African and Afro-American studies. The topical format allows in-depth

analysis of some significant aspect of the African and Afro-American experience. (Lec. 3) Pre: 201 or 202 or permission of instructor. May be repeated with different topic. Staff

360 (or ENG 360) Africana Folk Life (I, 3) Examination of the process of creativity, context, and form in the oral literary tradition of peoples of African descent throughout the world. (Lec. 3) In alternate years. Next offered fall 1995. Staff

362 Afro-American Poetry and Drama
See English 362.

363 Afro-American Fiction
See English 363.

364 The African Novel
See English 364.

388 History of Sub-Sahara Africa
See History 388.

390 Directed Study or Research (I and II, 3) Directed study arranged to meet the needs of individual students who desire independent work and to promote collective research efforts in African and Afro-American Studies. (Independent Study) Pre: permission of director. Staff

410 (or PSC 410) Issues in African Development (I or II, 3) A seminar focusing on the dynamics of African development, including political and social change, economic development, education, urbanization, rural development, environmental management, labor and business, industrialization, and technology transfer. (Seminar) Pre: APG 313 or PSC 201 or HIS 388 or permission of instructor. Staff

466 Urban Problems
See Political Science 466.

474 Topics in Pan-African Literature
See English 474.

Course Codes

ACC Accounting
ADE Adult and Extension Education
AAF African and Afro-American Studies
AVS Animal and Veterinary Science
APG Anthropology
ASP Aquacultural Science and Pathology
ART Art
ARH Art History
AST Astronomy
BGS Bachelor of General Studies
BCH Biochemistry
BIO Biology
BOT Botany
BSL Business Law
CHE Chemical Engineering
CHM Chemistry
CHN Chinese
CVE Civil and Environmental Engineering
CLA Classics
CLS Comparative Literature Studies
CMS Communication Skills
COM Communication Studies
CMD Communicative Disorders
CPL Community Planning
CSC Computer Science
CNS Consumer Studies
DHY Dental Hygiene
ECN Economics
EDC Education
ELE Electrical Engineering
EGR Engineering
ENG English
ELS English Language Studies
ENT Entomology
FIN Finance
FST Fisheries Science and Technology
FSN Food Science and Nutrition
FRN French

GEG Geography
GEL Geology
GER German
GRK Greek
HLT Health
HSA Health Services Administration
HBW Hebrew
HIS History
HEC Home Economics
HED Home Economics Education
HPR Honors Program
HDF Human Development and Family Studies
HSS Human Science and Services
IME Industrial and Manufacturing Engineering
ISC Information Science
INS Insurance
IRE Irish
ITL Italian
JPN Japanese
JOR Journalism
LRS Labor and Industrial Relations
LAR Landscape Architecture
LAN Languages
LAT Latin
LAS Latin American Studies
LET Letters
LSC Library and Information Studies
LIN Linguistics
MGT Management
MIS Management Information Systems
MGS Management Science
MAF Marine Affairs
MRD Marine Resource Development
MKT Marketing
MTH Mathematics
MCE Mechanical Engineering and Applied Mechanics
MTC Medical Technology
MCH Medicinal Chemistry

MIC Microbiology
MSC Military Science
MUS Music
NRS Natural Resources Science
NES New England Studies
NUR Nursing
OCE Ocean Engineering
OCG Oceanography
OMT Operations Management
PHC Pharmaceuticals
PCG Pharmacognosy
PCL Pharmacology and Toxicology
PHP Pharmacy Practice
PHL Philosophy
PED Physical Education
PHT Physical Therapy
PHY Physics
PLS Plant Sciences
PSC Political Science
POR Portuguese
PLA Prior Learning Assessment
PSY Psychology
QBA Quantitative Business Analysis
RLS Religious Studies
RDV Resource Development
RDE Resource Development Education
REN Resource Economics
RUS Russian
SOC Sociology
SPA Spanish
STA Statistics
TMD Textiles, Fashion Merchandising, and Design
THE Theatre
UYA University Year for Action Internship Program
URB Urban Affairs
WMS Women's Studies
WRT Writing
ZOO Zoology

Animal and Veterinary Science (AVS)

Chairperson: Associate Professor Nippo (Fisheries, Animal and Veterinary Science)

101 Introduction to Animal Science (I, 3) Animal industry's role in world and national economy; inheritance, growth, physiology, nutrition, and diseases of domestic animals and poultry; geographic distribution and marketing of animal products. (Lec. 3) Nippo (N)

102 Introduction to Animal Science Laboratory (I, 1) Laboratory and demonstrations of principles of the animal industries. (Lab. 2) *Pre: credit or concurrent enrollment in 101.* Staff

104 Animal Management Techniques (II, 2) Lecture and laboratory in the handling skills needed to maintain animal comfort and productivity. (Lec. 1, Lab. 2) *Pre: 101 and 102.* Gross

201 Companion Animal Management (II, 3) Nutrition, reproduction, behavior, and management of companion animals. (Lec. 3) *Pre: 101.* Nippo

212 Feeds and Feeding (I, 3) Principles and practices of feeding farm animals, nutrient requirements, physiology of digestion, identification and comparative value of feeds, computer calculation of rations for livestock. (Lec. 2, Lab. 2) Staff

301, 302 Seminar in Animal and Veterinary Science (I and II, 1 each) Readings, reports, lectures, and discussions on scientific topics in animal and veterinary science. Subject matter adapted to student and faculty interest. (Seminar) *Pre: junior or senior standing.* Nippo

323 Animal Management I (II, 3) Principles of care and management of domesticated ruminant animals including dairy cattle, beef cattle, sheep, and goats. Emphasis on the production methods of the animal industries. Participation in field trips required. (Lec. 3) Mallilo, McCreight, and Gross

324 Animal Management II (II, 3) Principles of the care and management of domesticated monogastric animals including swine, horses, and poultry. Emphasis will be given to modern production methods. Participation in field trips required. (Lec. 3) Rhodes and Staff

331 Anatomy and Physiology (I, 3) Fundamentals of anatomy and physiology of domesticated animals. (Lec. 3) *Pre: ZOO 111 and junior standing.* Rhodes

332 Animal Diseases (II, 3) Specific diseases of avian and mammalian species; etiology, symptoms, and control. (Lec. 3) *Pre: 331.* Whitworth

333 Anatomy and Physiology Laboratory (I, 1) The fundamental anatomy of domestic animals is examined. Demonstrations of physiological principles are performed. Laboratory

techniques for screening physiological function *in vivo* and *in vitro* are covered. (Lab. 2) *Pre: credit or concurrent enrollment in 331.* Rhodes

343 Behavior of Domestic Animals (II, 3) Examination of the basis for, and exhibition and control of behavioral patterns of domestic animals. (Lec. 3) *Pre: 101.* Nippo

361 Game Bird Propagation and Management (I, 3) Principles and techniques of game bird propagation, hatchery operation, confinement rearing, nutrition, disease problems, and shooting preserve management. (Lec. 2, Lab. 2) *Pre: BIO 102 or ZOO 111.* Staff

365 Laboratory Animal Technology (I, 3) Management of laboratory animals with emphasis on animal biology, breeding, care, health, research use, and animal welfare. (Lec. 2, Lab. 2) *Pre: ZOO 111 or BIO 102.* Whitworth

372 Introductory Endocrinology (I, 3) Morphology and physiology of endocrine glands. Roles of hormones in regulation of body processes. Discussion of all endocrine organs and relationship of endocrine and nervous systems. Emphasis on domesticated animals and fowl. (Lec. 3) *Pre: BIO 102 or ZOO 111.* Rhodes

399 Animal Science Internship (I and II, 1-6) Options in various professional experience programs involving the animal and veterinary sciences. (Practicum) *Pre: permission of chairperson. May be repeated for a maximum of 6 credits.* S/U credit. Staff

412 Animal Nutrition (I, 3) Principles of animal nutrition, metabolism of carbohydrates, proteins, and fats; mineral and vitamin requirements; nutritive requirements for maintenance, growth, reproduction, lactation, and work. (Lec. 3) *Pre: 212, organic chemistry, and junior standing.* Nippo

420 Animal Breeding and Genetics (II, 3) Scientific methods for the genetic improvement of domesticated animals. Genetic variation and expected results of different types of selection and mating systems. (Lec. 3) *Pre: 352 or equivalent. In alternate years. Next offered 1995-96.* Staff

462 Laboratory Animal Techniques (II, 3) Laboratory animal applications in clinical studies; research in nutrition, endocrinology, and other selected topics. (Lec. 1, Lab. 4) *Pre: 365.* Whitworth

463 Animal Veterinary Technology (II, 3) Theory and application of animal health practices required of paraprofessionals in a veterinary practice. The role of the veterinary assistant in a modern clinical practice will be emphasized. (Lec. 2, Lab. 3) *Pre: 331.* Staff

472 Physiology of Reproduction (II, 3) Anatomy and physiology of reproduction, with emphasis on domestic animals. Current experimentation in endocrinology of reproduction is surveyed. (Lec. 2, Lab. 2) *Pre: ZOO 111.* Rhodes

491, 492 Special Projects (I and II, 1-3 each) Work which meets individual needs of students in aquaculture, animal, poultry, and food science. (Independent Study) Staff

591, 592 Research Problems (I and II, 3 each)

Anthropology (APG)

Chairperson: Professor Poggie (Sociology and Anthropology)

200 (or LIN 200) Language and Culture (I or II, 3) Crosscultural survey of the interaction of culture and language. Introduction to various fields of linguistic research emphasizing descriptive and semantic investigations. Linguistic studies used as illustrative material. (Lec. 3) Pollnac (S)

201 Human Origins (I and II, 3) The biocultural evolution of humans; review of the fossil record. (Lec. 3) Loy and LaVelle (N)

202 The Prehistoric Ages (I and II, 3) Archaeological perspectives on human biological and cultural development from the Old Stone Age to the Iron Age. Emphasizes prehistoric lifeways, emergence of food production, earliest Old and New World civilizations. (Lec. 3) Turnbaugh (S)

203 Cultural Anthropology (I and II, 3) Anthropological approaches to the study of peoples and cultures around the world. (Lec. 3) Staff (S)

220 Introduction to the Study of Language See Linguistics 220.

250 Africanity See African and Afro-American Studies 250.

300 Human Fossil Record (I, 3) Investigation into the biocultural evolution of hominids over the last 15 million years; course based on evidence from fossil bones, teeth, and paleoecological reconstruction. (Lec. 3) *Pre: 201 or 202 or permission of instructor.* LaVelle

302 Methods of Anthropological Inquiry (I or II, 3) Logic, techniques, and problems in obtaining true information in anthropological inquiry. Problems from anthropological field work and use of cross-cultural data. (Lec. 3) *Pre: 203 or permission of instructor. In alternate years. Next offered 1995-96.* Poggie

303 New World Prehistory (I or II, 3) Reconstruction of American Indian cultural history from earliest times to the period of European discovery and colonization, using archaeological evidence and perspectives. (Lec. 3) Turnbaugh (F)

309 Anthropology of Religion (I or II, 3) Religious systems of selected peoples around the world; examination of theories concerning the origins, functions, and natures of these religions. (Lec. 3) Staff

310 Topics in Anthropology (I and II, 1-3)

Analytical study of selected topics in anthropology. Subjects will vary according to the expertise and availability of instructors. (Lec. 1-3) *Pre: one anthropology course or permission of instructor. May be repeated with different topic.* Staff

311 Native North Americans (I or II, 3) Survey of selected North American Indian groups from before European contact to the present. Modern reservation life; influence of the federal government on Indian life. (Lec. 3) Lynch (F)

313 Peoples of Africa (I or II, 3) Studies of Africa's peoples and cultures from prehistoric times to the present. (Lec. 3) Pollnac (F)

315 Cultures and Societies of Latin America (I or II, 3) Contemporary cultures and societies, emphasis on adjustment of the people to modern social and economic changes. (Lec. 3) *Pre: 203 or permission of instructor.* Poggie (F)

317 Archaeological Method and Theory (I or II, 3) Problems of collection and interpretation of data, emphasizing nature of archaeological investigation, classification, dating, reconstruction of social contexts. Laboratory demonstrations. (Lec. 3) *In alternate years. Next offered 1994-95.* Turnbaugh

319 Cultural Behavior and Environment (I or II, 3) Cultural adaptations made by traditional and industrial societies to natural and human environments using examples from prehistory and ethnography. (Lec. 3) *In alternate years. Next offered 1995-96.* Turnbaugh (S)

320 Sociolinguistics
See Linguistics 320.

322 Anthropology of Modernization (I or II, 3) Patterns and processes of contemporary social and cultural change among traditional people. (Lec. 3) *Pre: 203 or permission of instructor.* Poggie

325 The Irish (I, 3) An examination of the beliefs, customs, and social institutions which comprise Irish life, at home and abroad. (Lec. 3) Lynch (F)

326 Anthropology of Law (I or II, 3) Examination of the range of procedures for handling disputes in selected societies around the world. Emphasis on relation of law to its cultural context. (Lec. 3) Lynch

327 History of Physical Anthropology (I or II, 3) An examination of some classic works in human evolution and physical anthropology. Designed to provide an understanding of the philosophical and historical development of biological anthropology. (Lec. 3) Loy (L)

350 Human Variation (I or II, 3) Anthropological investigation into the nature and causes of human biological diversity with emphasis on living populations. Students enrolled in this course will serve as a sample for measuring human variation. (Lec. 3) *Pre: any 200-level anthropology course or permission of instructor.* LaVelle

390 Human Sociobiology and Ethology
See Sociology 390.

400 Evolution, Culture, and Human Disease (II, 3) Investigation of the dynamic interrelationships between culture, human disease, and evolution. Encompasses study of living peoples as well as our fossil and prehistoric ancestors, and includes infectious and chronic diseases. (Lec. 3) *Pre: introductory physical anthropology, biology, or zoology, or permission of instructor.* Staff

401 History of Anthropological Theory (I or II, 3) Theory from the sixteenth century to the present; readings from Tylor, Morgan, Boas, Sapir, Kroeber, Benedict, Malinowski, and Radcliffe-Brown. (Seminar) *Pre: 203 or permission of instructor.* Poggie

405 (or PSY 405) Psychological Anthropology (I or II, 3) Study of human behavior in different cultures employing psychological concepts and theories. (Lec. 3) *Pre: 203 or permission of instructor.* Pollnac

412 Primate Behavior and Organization (I or II, 3) Investigation of the naturalistic behavior and organization of nonhuman primates, and the relationship of primate data to anthropology. (Lec. 3) *Pre: 201 or permission of instructor.* Loy

413 (or MAF 413) Peoples of the Sea (I, 3) Examination of human sociocultural adaptation to the seas. (Lec. 3) *Pre: 203 or permission of instructor.* Pollnac and Poggie

470 Problems in Anthropology (I and II, 3) Staff-guided study and research, seminar, or individual program. (Independent Study) *Pre: permission of chairperson.* Staff

Aquacultural Science and Pathology (ASP)

Chairperson: Associate Professor Nippo (Fisheries, Animal and Veterinary Science)

281 Introduction to Aquaculture (I, 3) Aquaculture, its contribution to world food supply, methods of production, environmental and ecological considerations, cultural practices employed for selected species, selective breeding, feeding, disease, processing, and marketing. (Lec. 3) *Pre: BIO 102 or ZOO 111.* Rice

352 General Genetics (I, 3) Introduction to genetic principles and concepts with applications and implications of these concepts to man and other species. (Lec. 3) *Pre: BOT 111, or BIO 101 or 102, or ZOO 111. Not open to students with credit in BOT 352.* Staff

354 Genetics Laboratory (I, 2) Basic principles of heredity demonstrated with *Drosophila*, *Coturnix*, and plants. (Lab. 4) *Pre: credit or concurrent enrollment in 352 or BOT 352. Not open to students with credit in BOT 354 or 454.* Staff

381 Shellfish Aquaculture (II, 3) Worldwide culture of marine and freshwater crustaceans and molluscs. Emphasis on life history, biological requirements, cultural practices, and economic importance of major species used for human food. (Lec. 3) *Pre: 281 and one semester of general chemistry.* Rice

400 Diseases of Cultured Fishes (II, 3) Nature, causes, diagnosis, and spread of diseases limiting piscine freshwater and marine aquaculture projects. Emphasis on prevention, control, and treatment of more common diseases affecting hatchery management. (Lec. 3) *Pre: 281; ZOO 201 or AVS 331.* Wolke

401 Pathobiology (I, 3) Mechanisms and causes of disease in homeothermic and poikilothermic vertebrates. Cell death, inflammation, infection, metabolic disorders and neoplasia in relation to fish, reptiles, birds, and mammals. Effects of disease at the cellular, tissue, organ, and organismal levels with a medical orientation. (Lec. 3) *Pre: ZOO 201 or AVS 331.* Wolke

476 The Genetics of Fish (I, 3) Modes of inheritance found in fish including chromosome number, polyploidy, sex determination, and hybridization. Heritabilities, methods of selection, and mating systems used in the development of fish suited for intensive culture. (Lec. 3) *Pre: 352.* Bradley

481 Shellfish Aquaculture Laboratory (I, 2) Detailed study of hatchery, nursery, and grow-out techniques for the production of bivalve mollusks. Culture of phytoplankton, conditioning of broodstock, spawning, larviculture, settlement, metamorphosis, nursery and grow-out methods. (Lab. 6) *Pre: 381 or permission of instructor. Offered fall of odd-numbered years.* Rice

483 Salmonid Aquaculture (I, 3) Principles of salmonid aquaculture, including culturing, spawning, incubation, feed formulation and feeding, disease control, genetics, systems management, harvesting, and transport. (Lec. 2, Lab. 2) *Pre: 281 or equivalent.* Bradley

486 Applied Physiology of Fish (II, 3) Functions of the organ systems of fish, regulation of physiological functions and environmental interactions. Emphasis on the teleosts. (Lec. 3) *Pre: ZOO 341 or 345 or equivalent.* Bradley

501, 502 Seminar (I and II, 1 each)

532 (or PSY 532 or STA 532) Experimental Design (II, 3)

534 (or MIC 534) Animal Virology (I, 3)

536 (or MIC 536) Virology Laboratory (I, 2)

538 (or MIC 538) Epidemiology of Viral and Rickettsial Diseases (II, 2)

555, 556 Pathology Rotation (I and II, 3 each)

581 Current Topics in Molluscan Aquaculture (I, 3)

584 Advanced Aquaculture Systems (II, 3)

586 Fish Nutrition (I, 3)

591, 592 Special Projects (I and II, 1-3 each)

Art (ART)

Chairperson: Professor Holmes

002 Sophomore Review (*I and II, 0*) Presentation by majors of a broad selection of their previous college-level work for review by faculty. (*Studio*) *Pre:* 101, 103, 207, and ARH 120. Staff

101 Two-Dimensional Studio I (*I and II, 3*) Exploration of principles of visual organization relating primarily to formulations on the two-dimensional surface by means of fundamental studies and assignments in studio techniques. (*Studio 6*) Staff (A)

103 Three-Dimensional Studio I (*I and II, 3*) Introduction to problems in three-dimensional organization. Observations from objects with discussion and application to simple mold and casting techniques. Introduction to the use of basic materials, clay, plaster, and wood. (*Studio 6*) Rohm and Calabro (A)

203 Color (*I and II, 3*) Visual perception of color and manipulation of light as they pertain to two- or three-dimensional formulations. (*Studio 6*) Leete (A)

207 Drawing I (*I and II, 3*) Visual perception and observation, using nature structures, drawing from live models, still life, and landscape; exercises in basic drawing techniques and principles. (*Studio 6*) Staff (A)

208 Drawing II (*I and II, 3*) Advanced practice in graphic conceptions; exercises in spatial problems, organizing relationships of abstract forms and structures; advanced drawing media. (*Studio 6*) *Pre:* 207. Staff

213 Photography I (*I and II, 3*) Introduction to photography, exploration of related techniques using light-sensitive materials. (*Studio 6*) *Pre:* permission of instructor. May be repeated for a maximum of 6 credits. Parker

215 Filmmaking I (*I and II, 3*) Introduction to basic filmmaking technique and theory. Emphasis on film as a visual art. Required projects and readings. (*Studio 6*) May be repeated for a maximum of 6 credits with permission of instructor. May be taken once for General Education credit. Staff (A)

221 Two-Dimensional Studio II (*I and II, 3*) Techniques of painting, utilizing as reference the natural and manmade environments. Traditional and contemporary materials. (*Studio 6*) *Pre:* 101 and 207. Leete

231 Printmaking I (*I and II, 3*) Introduction to intaglio and lithographic processes, with an emphasis on image development and workshop procedures. (*Studio 6*) *Pre:* 101 or 207 or permission of instructor. Pagh (A)

233 Relief Printing and Typography I (*I and II, 3*) Introduction to basic elements of graphic design; letter forms, their relationship to the page and to the image. Various traditional and modern reproduction techniques, workshop practice in typesetting and layout. (*Studio 6*) *Pre:* 101 or permission of chairperson. Richman (A)

243 Three-Dimensional Studio II (*I and II, 3*) Formation of three-dimensional forms employing basic sculptural materials and techniques. Basic media, emphasis on form, material, and structural means in studio practice. (*Studio 6*) *Pre:* 103 or permission of instructor. Rohm and Calabro

300 Art Gallery Internship (*I and II, 3*) Curatorial responsibilities taught through hands-on experience in exhibition programs including: exhibition research, production of interpretive texts and lectures, art object preparation, registration, and installation. (*Practicum*) *Pre:* ARH 251, 252 or permission of instructor. Staff

301, 302 Projects in Studio I, II (*I and II, 3 each*) Studio projects under guidance of instructor selected by student. The student may select another instructor for 302. (*Independent Study*) *Pre:* enrollment in Honors Colloquium and/or permission of chairperson and instructor. May be repeated with permission of instructor and chairperson. Staff

303 Topics in Studio (*I or II, 3*) Selected topics based on particular materials, techniques, or thematic premises. Topics and semesters to be announced. (*Studio 6*) *Pre:* permission of instructor. May be repeated for credit with permission of instructor and chairperson. Staff

304 Introduction to Computer Art (*I or II, 3*) Introduction to using the microcomputer to create final works or as an aid in producing works in traditional mediums. (*Studio 6*) *Pre:* junior or senior standing in the art studio program. Leete

305 Photographic Alternatives (*I or II, 3*) Topics emphasize possibilities in photographic themes and techniques, including alternative processes, collotype, and studio practice. May be repeated with permission of instructor and chairperson. (*Studio 6*) *Pre:* 213 and permission of instructor. Staff

307 Art Studio Internship (*I and II, 3 or 6*) Work in an institution, agency, or organization supervised by an art professional and a studio faculty member. Activities, expectations, performance assessments, hours, and credits determined through prior consultation. (*Practicum*) Limit of 6 credits toward graduation. *Pre:* junior standing in the B.A. or B.F.A. studio program and permission of chairperson. Staff

309, 310 Drawing III, IV (*I, 3 each*) 309: Further problems, emphasis on independent investigation in analysis, planning, and supportive notation. 310: Continuation of 309. (*Studio 6*) *Pre:* 208 or permission of instructor for 309; 309 for 310. 310 may be repeated for credit with permission of instructor. Klenk

314 Photography II (*I and II, 3*) Continuation of 213. (*Studio 6*) *Pre:* 213. May be repeated for credit with permission of instructor. Parker

316 Filmmaking II (*I and II, 3*) Continuation of 215 with added emphasis on sound. Required projects and reading. (*Studio 6*) *Pre:* 215. May be repeated for credit with permission of instructor. Staff

322 Two-Dimensional Studio III (*I and II, 3*) Continuation of 221. (*Studio 6*) *Pre:* 221. May be repeated for credit with permission of instructor. Klenk and Leete

332 Printmaking II (*I and II, 3*) Continuation of 231 with introduction to color lithography. Contemporary viewpoints and their relationship to traditional printmaking, with emphasis on individual image development. (*Studio 6*) *Pre:* 231. Pagh

334 Relief Printing and Typography II (*I and II, 3*) Continuation of 233. Applications of previous studies to experimental workshop assignments leading to production of book pages, folders, posters, and other visual material incorporating type and print in a contemporary idiom. (*Studio 6*) *Pre:* 233 or permission of chairperson. May be repeated for credit with permission of instructor. Richman

337 Printmaking III (*I and II, 3*) Semi-independent work in printmaking media. Introduction of aluminum plate and photo-lithography. (*Studio 6*) *Pre:* 332. Pagh

338 Printmaking IV (*I and II, 3*) Emphasis on individual development in specific printmaking media. Critical evaluation of visual development. (*Studio 6*) *Pre:* 337. May be repeated for a maximum of 6 credits with permission of instructor. Pagh

344 Three-Dimensional Studio III (*I and II, 3*) Continuation of 243. (*Studio 6*) *Pre:* 243 or permission of instructor. May be repeated for a maximum of 6 credits with permission of instructor. Rohm and Calabro

405, 406 Studio Seminar (*I and II, 3 each*) Intensive self-directed work under guidance of instructors. Periodic critiques and discussions of work of all participants. (*Studio 6*) *Pre:* concurrent enrollment in 003 and senior standing; 405 for 406. Staff

501 Graduate Studio Seminar (*I or II, 3*)

Art History (ARH)

Chairperson: Professor Holmes (Art)

120 Introduction to Art (I and II, 3) Fundamental principles of the visual arts, evolution of styles and conceptions through the ages in different forms of creative expression. (Lec. 3) Holmes (A)

184 Architecture: An Introduction (I and II, 3) An introduction to the theory and history of architecture, considering aesthetic issues, social function, and the impact of technological change. Material will be presented in slide lectures and field visits to architectural sites. (Lec. 3) Onorato

251 Introduction to History of Art (I and II, 3) The development of architecture, sculpture, and painting from prehistory through the Middle Ages. (Lec. 3) Staff (A)

252 Introduction to History of Art (I and II, 3) The development of architecture, sculpture, and painting from the early Renaissance to the present. (Lec. 3) Staff (A)

265 Modern French Art: Nineteenth and Twentieth Centuries (I or II, 3) Painting and sculpture in France from 1789 to 1950 with emphasis on the social background and relationships with other art forms. (Lec. 3) Staff (A) (F)

284 Introductory Topics in Architectural History (I or II, 3) Consideration of the history of architecture and city planning through surveys of selected periods and themes. (Lec. 3) *May be repeated for a maximum of 6 credits with permission of instructor. May be taken once for General Education credit.* Onorato (A)

285 Women in Art (I, 3) Survey of images of women throughout the history of art in Europe and America; investigation of the roles of women as patrons and artists in art history. (Lec. 3) Staff (A)

300 Art History Internship (I and II, 1-6) Internship in an approved professional organization (such as museum, gallery, preservation society, auction house). Specific details determined in consultation with faculty supervisor and off-campus liaison, and approved by chairperson. (Practicum) *May be repeated for a maximum of 6 credits. S/U only.* Staff

354 The Art of Greece and Rome (I, 3) Developments in architecture, painting, and sculpture in Greece and Rome from 800 B.C. to 400 A.D. Brief analysis of the art of the Aegean from 2500 to 1500 B.C. (Lec. 3) *Pre: 251 or permission of chairperson.* Hollinshead (F)

356 Medieval Art (II, 3) Painting, sculpture, architecture, and minor arts of the Middle Ages from 500 to 1400 in Western Europe. (Lec. 3) *Pre: 251 or permission of chairperson.* Hollinshead (F)

359 Baroque Art (II, 3) Developments in painting, sculpture, and architecture in Italy and Northern Europe from 1600 to 1750. (Lec. 3) *Pre: 251 or 252 or permission of instructor.* Roworth (A) (F)

363 Modern Art: Nineteenth and Twentieth Centuries (I or II, 3) A survey of trends in the visual arts over the last two centuries with emphasis on defining a "modern" aesthetic. Painting, sculpture, performance, conceptual, and related arts will be discussed. (Lec. 3) *Pre: 251 or 252 or permission of instructor.* Onorato (F)

364 American Art (I or II, 3) Painting, sculpture, and architecture from their origins in the seventeenth century to the present; emphasis on the nineteenth century. (Lec. 3) *Pre: 251 or 252.* Onorato (A)

365 Renaissance Art (I, 3) Painting, sculpture, and architecture of Italy and northern Europe from 1400 to 1600. (Lec. 3) *Pre: 251 or 252 or permission of instructor.* Roworth (F)

371, 372 Projects in Art History I, II (I and II, 3 each) Directed study in art history under guidance of instructor selected by student. The student may select another instructor for 372. (Independent Study) *Pre: enrollment in Honors Colloquium and/or permission of chairperson and instructor; 371 for 372.* Staff

374 Topics in Film (II, 3) Explores the social, historical, and aesthetic development of the cinema from 1895 to the present. Lectures (3 hrs.) and required film screenings. (Lec. 3) *May be repeated for a maximum of 6 credits with permission of instructor.* Staff (A)

375 Topics in the History of Photography (I or II, 3) Explores the social, historical, and aesthetic development of photography from 1826 to the present. (Lec. 3) *May be repeated for a maximum of 6 credits with permission of instructor.* Staff

461 Topics in Methods, Theory, and Criticism (I or II, 3) Art history methods or selected topics in the theory and criticism of art. Topics. (Lec. 3) *Pre: permission of chairperson. May be repeated for credit with permission of instructor.* Holmes

462 Contemporary Art Seminar: Art Since 1945 (II, 3) Analysis of contemporary work and its relation to earlier movements. (Seminar) *Pre: 363. May be repeated for a maximum of 6 credits with permission of instructor.* Onorato

469, 470 Art History: Senior Projects (I and II, 3-6 each) Intensive, independent work on a project determined after consultation with the student's project advisor. (469, Independent Study; 470, Tutorial) *Pre: permission of chairperson.* Staff

480 Advanced Topics in European and American Art (I or II, 3) Consideration of the history of European and American art through analysis of selected periods or themes. (Seminar) *Pre: permission of instructor.* Staff

Astronomy (AST)

Chairperson: Professor Malik (Physics)

108 Introductory Astronomy (I and II, 3) Celestial sphere, earth as an astronomical body, sun, motions and characteristics of members of solar system, constellations, constitution of stars and nebulae. Planetarium used freely for lectures and demonstration. (Lec. 3) Staff (N)

334 Optics
See Physics 334.

483, 484 Laboratory and Research Problems in Physics
See Physics 483, 484.

491, 492 Special Problems
See Physics 491, 492.

Bachelor of General Studies (BGS)

Coordinator: Professor Grubman-Black

100 Pro-Seminar (I or II, 4) Introduction to critical approaches to learning with emphasis on reading and rhetorical skills appropriate to college students. (Lec. 4) *Required of BGS students. S/U credit.* Staff (Cw)

390 Social Science Seminar (I or II, 6) Exploration of the social sciences for BGS students who have completed the Pro-Seminar, started their major, and have the consent of their advisor. (Seminar) *Required of BGS students.* Staff (S)

391 Natural Science Seminar (I or II, 6) Exploration of the natural sciences for BGS students who have completed the Pro-Seminar, started their major, and have the consent of their advisor. (Seminar) *Required of BGS students.* Staff (N)

392 Humanities Seminar (I or II, 6) Exploration of the humanities for BGS students who have completed their Pro-Seminar, started their major, and have the consent of their advisor. (Seminar) *Required of BGS students.* Staff (L)

397 Human Studies Major Seminar (I or II, 3) Capstone course of human studies major. Review and assessment of students' major education through intensive exploration of issues central to human studies. (Seminar) *Pre: completion of 30 credits of major. Required of BGS human studies majors.* Staff

398 Applied Communication Major Seminar (I and II, 3) Capstone course of applied communication major. Review and assessment of students' major education through intensive exploration of issues central to professional communications. (Seminar) *Pre: completion of 30 credits of major courses. Required of all applied communication majors.* Staff

399 Supervised Senior Project (I and II, 3) A project chosen by the student with faculty guidance on a topic relevant to the student's major, resulting in a paper or other demonstration of academic achievement. (*Independent Study*) *Pre: senior standing in BGS program and approval of advisor and BGS coordinator. Required of BGS students. Staff*

Biochemistry (BCH)

Chairperson: Professor Laux (Biochemistry, Microbiology, and Molecular Genetics)

282 The Nature of Biochemistry (II, 3) A few topics will be selected for historical development on the basis of their significance in the emergence of biochemistry as a scientific discipline, their importance in revealing fundamental principles of biochemistry, and their continual prominence in contemporary research. (This is not a survey course in biochemistry.) *Pre: CHM 124 or 227. Tremblay*

311 (BCP) Introductory Biochemistry (I and II, 3) Chemistry of biological transformations in the cell. Chemistry of carbohydrates, fats, proteins, nucleic acids, enzymes, vitamins, and hormones integrated into a general discussion of the energy-yielding and biosynthetic reactions in the cell. (*Lec. 3*) *Pre: CHM 124 or equivalent. Staff*

312 (BCP) Introductory Biochemistry Laboratory (II, 2) Laboratory exercises illustrate chemical and physical properties of biomolecules, separation techniques, enzyme catalysis, symptoms of nutritional deficiency, quantification of metabolic end-products, and drug detoxification. (*Lab. 4*) *Pre: credit or concurrent enrollment in 311. Tremblay*

352 Genetics
See Botany 352.

401 (BCP) (or MIC 401) Quantitative Cell Culture (I, 3) Methods of mammalian cell culture used for quantitative studies of normal and abnormal cells. Basic techniques for propagation and manipulation of cells in culture. (*Lec. 2, Lab. 3*) *Pre: MIC 211 or BCH 311. In alternate years. Next offered fall 1995. Staff*

403 (BCP) (or MIC 403) Introduction to Electron Microscopy (I, 2) Survey of techniques in electron microscopy. Discussion of advantages and limitations. Thin sectioning, negative staining, shadow-casting, freezing-etching, histochemical procedures, autoradiology, dark-room procedures, scanning electron microscopy, interpretation of electron micrographs. (*Lec. 2*) *Pre: permission of chairperson. Hufnagel*

405 (BCP) Electron Microscopy Laboratory
See Microbiology 405.

412 (BCP) Biochemistry Laboratory (II, 3) Same as 312 plus an individual supervised laboratory project selected in consultation with the student. Projects may include enzyme action, enzyme induction, drug action, use of radioisotopes, and plant metabolism. (*Lab. 6*) *Pre: credit or concurrent enrollment in 311. Tremblay*

421 (BCP) (or MIC 421) Cell Biology and Cancer (I, 3) Methods of study of the cancer cell and comparison to normal cell. Emphasis on cell culture experiments. (*Lec. 3*) *Pre: MIC 211 or BCH 311. In alternate years. Next offered fall 1994. Staff*

435 (BCP) Physical Chemistry for Life Sciences (I, 3) Gases, solution, thermodynamics, equilibrium, kinetics, quantum theory, and photochemistry. (*Lec. 3*) *Pre: one semester each of organic chemistry, physics, and calculus (two semesters of each recommended). Not open to chemistry majors. Hartman*

437 Fundamentals of Molecular Biology
See Botany 437.

451 Laboratory in Cell Biology
See Botany 451.

453 Cell Biology
See Botany 453.

454 Genetics Laboratory
See Botany 454.

464 Biochemistry of Metabolic Disease (II, 3) A study of the primary and secondary molecular changes in human metabolic diseases. Topics include aging, alcoholism, arteriosclerosis, diabetes, depression, and genetic diseases. (*Lec. 3*) *Pre: 311 or 481. Staff*

481 Principles of Biochemistry I (I, 4) Principles of biochemistry including bioenergetics, proteins and enzymology, carbohydrate metabolism, and oxidative phosphorylation. (*Lec. 3, Rec. 1*) *Pre: CHM 228, 229. Not for graduate credit in biochemistry. Tremblay and Rhoads*

482 Principles of Biochemistry II (II, 4) Principles of biochemistry including membranes, photosynthesis, lipid and nitrogen metabolism, hormones, and biosynthesis of DNA, RNA, and proteins. (*Lec. 3, Rec. 1*) *Pre: CHM 228, 229 and BCH 481. Not for graduate credit in biochemistry. Tremblay, Rhoads, and Chandlee*

484 Physical Methods in Biochemistry (II, 3) Experimental methods including spectroscopy, spectrofluorimetry, optical rotation, chromatography, and electrophoresis are applied to biochemical compounds and reactions. Physical principles and the calculation of important properties are stressed. (*Lec. 1, Lab. 4*) *Pre: 435, 481; and permission of chairperson. Hartman and Staff*

491, 492 (BCP) Research in Biochemistry (I and II, 1-6 each) Special problems. Student outlines the problem, carries on experimental work, presents the conclusions in a report. (*Independent Study*) *Pre: permission of instructor. Not for graduate credit in biochemistry. Staff*

495, 496 Biochemistry Seminar (I and II, 1 each) Discussion and presentation of research papers on selected subjects in biochemistry. (*Lec. 1*) *Pre: 311, 482, or S82. Staff*

502 (or MIC 502) Techniques in Microbial and Molecular Genetics (II, 2)

503 (BCP) (or MIC 503) Electron Microscopy (I, 2)

505 (BCP) (or MIC 505) Laboratory in Electron Microscopy (I, 3)

521 (BCP) Physical Biochemistry (I, 3)

522 (or BOT 522) Plant Molecular Biology (I, 4)

523, 524 (BCP) Special Topics in Biochemistry (I and II, 1-3 each)

541 (BCP) Laboratory Techniques in Biochemistry (I, 3)

542 (BCP) Proteins: Purification and Characterization (II, 3)

551 (BCP) (or MIC 551) Topics in Biochemistry for the Clinical Scientist (I, II, or SS, 3)

552 (or MIC 552) Microbial Genetics (II, 3)

572 (BCP) (or PLS 572) Plant Biochemistry (I, 3)

579 (or ZOO 579) Advanced Genetics Seminar (I and II, 1)

581 (BCP) General Biochemistry I (I, 3)

582 (BCP) General Biochemistry II (II, 3)

583 (BCP) Metabolism (I, 3)

584 (BCP) Membrane Biochemistry (II, 3)

585 (BCP) Recent Advances in Receptor Research (I, 1)

599 (BCP) Master's Thesis Research (I and II)

Biology (BIO)

Chairpersons: Professor Killingbeck (Botany), Professor Laux (Biochemistry, Microbiology, and Molecular Genetics), and Associate Professor Bibb (Zoology)

101 (or BOT 101) Biology of Plants (I and II, 3) Introduction to major concepts of biology through a study of plants, including structure, function, reproduction, inheritance, ecology, and topics of current interest. Designed for nonscience majors. (*Lec. 2, Lab. 1*) *Not open to students with credit in BOT 111. Staff (N)*

102 General Animal Biology (I and II, 3) Introduction to life processes of animals, including humans. Examines biological aspects of inheritance, ecology, behavior, animal survey, and regulation of biosystems. Laboratory surveys general concepts of animal biology. (*Lec. 2, Lab. 2*) *Goldsmith or Heppner (N)*

Note: Students who elect 101 may not enroll in BOT 111, and those who elect 102 may not enroll in ZOO 111.

Botany (BOT)

Acting Chairperson: Professor Harlin

101 Biology of Plants
See Biology 101.

111 General Botany (I and II, 4) Structure, physiology, and reproduction of seed plants as a basis for understanding broad principles of biology and relation of plants to human life. Survey of plant kingdom. (Lec. 3, Lab. 2) *Not open to students with credit in BIO 101.* Koske or Staff (N)

262 Introductory Ecology
See Zoology 262.

311 Plant Anatomy (I, 3) Structure of vascular plant tissues and organs as it relates to their function. Variations in anatomy, phylogeny of vascular tissue, anatomy of fossils, and the relation of structure to economic value. (Lec. 1, Lab. 4) *Pre: 111 or permission of instructor.* Goos or Mottinger

321 General Morphology (II, 3) Representative forms of prokaryotes, algae, fungi, bryophytes, and vascular plants with emphasis on evolution, ecology, and life cycle. (Lec. 1, Lab. 4) *Pre: 111 or permission of instructor.* Staff

323 Field Botany and Taxonomy (I, 4) Collection, identification, and study of vascular flora of Rhode Island, including use of manuals and herbarium specimens. Field trips throughout Rhode Island. Discussion of principles, methods, and data used in classification. (Lec. 2, Lab. 4) *Pre: 101 or 111.* Killingbeck

332 (or PLS 332) Plant Pathology (II, 4) Nature, cause, and control of plant diseases. Use of basic techniques for identification of major types of plant diseases and their causal agents. (Lec. 4) *Pre: 111 or permission of instructor.* Mueller

352 (or BCH 352 or ZOO 352) General Genetics (II, 3) Fundamental concepts of inheritance and variation in plants, animals, bacteria, and viruses. Methods of recombination, the process of mutation, gene structure, and function. (Lec. 3) *Pre: 111 and ZOO 111, or permission of instructor. Not open to students with credit in ASP 352.* Mottinger

418 Marine Botany (I, 3) Field and laboratory study of ecology and taxonomy of various communities of marine plants, primarily seaweeds and seagrasses. Methods of collecting, fixation, herbarium processing, and identification. Individual projects required. (Lec. 2, Lab. 3) *Pre: 321 or permission of instructor. 262 recommended. In alternate years. Next offered 1995-96.* Harlin

419 Freshwater Botany (I, 3) Field and laboratory study of ecology and taxonomy of various communities of freshwater microalgae, macroalgae, and higher plants. Methods of collecting,

fixation, enumeration, identification, and crop estimation. Individual collections required. (Lec. 2, Lab. 3) *Pre: 321 or permission of instructor. 262 recommended. In alternate years. Next offered 1994-95.* Staff

432 Mycology: Introduction to the Fungi (I, 4) Structure, development, cytology, distribution, and identification of fungi, with consideration of their importance in industry, medicine, plant disease, and organic decomposition. (Lec. 2, Lab. 4) *Pre: BIO 101 or BOT 111; 321 recommended.* Goos

437 (or ZOO 437) Fundamentals of Molecular Biology (I, 3) Biochemical basis of heredity as seen through the structure and function of nucleic acids. Includes DNA replication, transcription, translation, gene regulation, and gene organization in prokaryotes and eukaryotes. Current methods emphasized. (Lec. 3) *Pre: MIC 211, BOT 352, and BCH 311, or permission of instructor.* Norris or Goldsmith

445 Plant Physiology (II, 3) Growth and function of vascular plants from seed germination through flowering. Topics include energy metabolism, transport processes, environmental interactions, stress physiology, and developmental control. (Lec. 2, Lab. 3) *Pre: 111, CHM 112, or permission of instructor.* Roberts

451 (or MIC 451 or BCH 451) Laboratory in Cell Biology (II, 1) Analysis of subcellular processes, structures, and molecules using techniques including gel electrophoresis, spectrophotometry ultracentrifugation, and protein purification. Topics range from analysis of gene expression to subcellular localization of enzymatic activity. (Lab. 2) *Pre: concurrent enrollment in 453 (or MIC 453) or permission of instructor.* Norris

453 (or MIC 453 or BCH 453) Cell Biology (II, 3) Structure, replication, and function of eukaryotic cells at subcellular level. Topics considered include cell membranes, cytoplasmic organelles and nuclei, cell division, cellular differentiation, and methods. Emphasis on recent publications. (Lec. 3) *Pre: two semesters of biology, BCH 311, junior standing, or permission of instructor.* Norris

454 (or BCH 454) Genetics Laboratory (I, 3) Principles of classical and molecular genetics using microorganisms as well as higher plants and animals. Experimental techniques include human chromosome preparations, screening for growth requirements in microorganisms, mutagenesis, gel electrophoresis and nucleic acid hybridization. (Lab. 6) *Pre: 352. In alternate years. Next offered 1995-96.* Mottinger

455 Marine Ecology
See Zoology 455.

457 Marine Ecology Laboratory
See Zoology 457.

465 Phycology: An Introduction to the Algae (II, 3) Taxonomy, morphology, and evolution of algae. Use of ultrastructure in modern taxonomy; various systems of classification. Field trips to different communities. Labs on the taxa discussed and techniques for axenic culture. (Lec. 1, Lab. 3) *Pre: 111, 321 recommended.* Harlin

491, 492 Special Problems (I and II, 1-3 each) Selected areas pertinent to needs of individuals or small groups. Class, seminar, or tutorial situations. (*Independent Study*) *Open only to undergraduates on arrangement with staff.* Staff

511 Special Readings in Developmental Plant Anatomy (I, 3)

512 Morphology of Vascular Plants (I, 3)

515 Light Microscopy Research Methods (I, 4)
521 (or MIC 521) Recent Advances in Cell Biology (I, 2)

522 (or BCH 522) Plant Molecular Biology (I, 4)

524 Methods in Plant Ecology (II, 3)

534 Physiology of the Fungi (II, 3)

546 Seminar in Plant Stress Physiology (II, 1-2)

551 Seminar in Aquatic Botany (I, 1)

554 Cytogenetics (I, 4)

562 Seminar in Plant Ecology (II, 2)

579 (or ZOO 579) Advanced Genetics Seminar (I and II, 1)

581, 582 Botany Seminar (I and II, 1 each)

590 Botanical Techniques (I, 1)

591, 592 Botanical Problems (I and II, 1-3 each)

593 Special Topics (I and II, 1-3)

Business Law (BSL)

Chairperson: Professor Sink (Management)

333 Legal and Ethical Environment of Business I (I and II, 3) An introduction to the origins, framework, and concepts of the legal and ethical environment of business with emphasis on contractual relations. (Lec. 3) *Pre: junior standing. Open to nonbusiness students with permission of chairperson.* Staff

334 Legal and Ethical Environment of Business II (I and II, 3) Operations of the U.S. system of jurisprudence and ethics as it affects the law of contracts, sales, debtor-creditor rights, and business organizations. (Lec. 3) *Pre: 333. Open to nonbusiness students with permission of chairperson.* Staff

442 Property Interests (II, 3) Creation and transfer of personal and real property interests: suretyship and guarantee, bailments, real estate law, trusts and estates. (Lec. 3) *Pre: 333 or permission of instructor.* Staff

450 Consumer Law and Legislation (I, 3) Introduction to consumer law (state and federal). Coverage includes a study of statutory law, administrative agencies, and court decisions. (Lec. 3) *Pre: 333 or permission of instructor.* Laviano

460 Law and the Entrepreneur (II, 3) Study of legal issues of concern to the entrepreneur—business organizations; limited partnership syndications, bankruptcy, SEC regulations, and patent and trademark protection. (Lec. 3) Pre: 333. Dunn

501 Law and Accounting (II, 3)

Chemical Engineering (CHE)

Chairperson: Professor S. Barnett

101 Foundations of Chemical Engineering (I and II, 1) An introduction to chemical engineering. Approaches to problem solving. Numerical presentation of data and data analysis. Block diagrams and flow charts. (Lec., Lab. 3) Staff

102 Introduction to Chemical Engineering (II, 1) Provides understanding and appreciation of design in the curriculum. (Seminar) Estrin and Staff

212 Chemical Process Calculations (I, 3) Orientation to chemical engineering, material-balance computations on chemical processes, use of gas laws, vapor pressure, humidity, solubility, and crystallization. (Lec. 3) Pre: CHM 112 or 192. Staff

272 Introduction to Chemical Engineering Calculations (II, 3) Introduction to the use of computers and numerical methods, including numerical solution of differential equations as applied to chemical engineering. (Lec. 2, Lab. 3) Pre: 212 and MTH 243. Rivero

313 Chemical Engineering Thermodynamics I (I, 3) Applications of the first, second, and third laws of thermodynamics involving thermophysics, thermochemistry, energy balances, combustion, and properties of fluids. (Lec. 2, Lab. 3) Pre: 212 or CHM 431 and MTH 243. Staff

314 Chemical Engineering Thermodynamics II (II, 3) Continuation of 313 with applications to compression, refrigeration, phase and chemical equilibria. (Lec. 2, Lab. 3) Pre: 313. Staff

322 Chemical Engineering Microlaboratory (II, 2) Use of microprocessors, A/D and D/A converters, sensors, and control hardware to analyze and control laboratory-scale processes. (Lab. 6) Pre: credit or concurrent enrollment in 348. Knickle

328 Industrial Plants (I, 1) Field trips to nearby plants demonstrating various phases of chemical engineering. Written reports are required. (Lab. 3) Pre: 348. Bose

332 Physical Metallurgy (I and II, 3) Fundamentals of physical metallurgy as they apply particularly to the engineering metals and their alloys. Properties, characteristics, and structure

of metals, theory of alloys, thermal processing, and studies in corrosion. (Lec. 2, Lab. 3) Not open to students with credit in 333 or 437. Pre: CHM 101, 103, or 191. Rockett

333 Engineering Materials (I and II, 3) First course in engineering materials devoted largely, but not exclusively, to physical metallurgy. Includes structure and properties of pure substances and binary systems at equilibrium and, when used intentionally, at nonequilibrium. (Lec. 2, Lab. 3) Pre: junior standing or permission of instructor. Not open to students with credit in 332 or 437. Rockett

340 Materials Processing and Metrology I See Industrial and Manufacturing Engineering 340.

345, 346 Chemical Engineering Laboratory (I and II, 2 each) Quantitative studies illustrating chemical engineering principles. Emphasis on report writing and the interpretation of experimental data. (Lab. 6) Pre: 348. Gray

347 Transfer Operations I (I, 3) Dimensional analysis; fluid statics; mass, energy, and momentum balances for fluid systems, boundary layers, turbulence, incompressible flow; flow through fixed beds of solids and fluidized beds; filtration. (Lec. 3) Pre: credit or concurrent enrollment in 313 or MCE 341. Gray

348 Transfer Operations II (II, 3) Heat transfer: conduction, convection, radiation. Mass transfer: distillation, liquid extraction, gas absorption; staged and differential contact. (Lec. 2, Lab. 3) Pre: 347. Bose

349 Transfer Operations III (I, 2) Diffusion and mass transfer, humidification and dehumidification, water cooling, absorption and ion exchange, drying, leaching. (Lec. 2) Pre: 348. Bose

351, 352 Plant Design and Economics (I and II, 3 each) Elements of plant design integrating the principles learned in previous courses. Emphasis is on optimum economic design and the writing of reports. (Lec. 1, Lab. 6) Pre: 314 and 348. Estrin, Gray

391, 392 Honors Work (I and II, 1–3 each) Independent study under close faculty supervision. Discussion of advanced topics in chemical engineering in preparation for graduate work. (Independent Study) Pre: junior standing and permission of chairperson. Staff

403, 404 (or OCE 403, 404) Introduction to Ocean Engineering Processes I, II (I and II, 3 each) Theory and basic principles directly applicable to ocean-related processes. Desalinization, mining, combating oil spills, seawater as a coolant, seawater as a waste diluent, food processing, sulfur and petroleum production, recovery minerals. (Lec. 2, Lab. 4) Pre: permission of instructor. Barnett and Knickle

425 Process Dynamics and Control (II, 3) Principles involved in automatic control of processing plants. Modeling and responses of dynamic systems, feedback control. (Lec. 3) Pre: MTH 243 and ELE 211 or 220 and credit or concurrent enrollment in 347 or MCE 354. Knickle

437 Materials Engineering (I and II, 3) Introduction to engineering aspects of the fundamentals of the solid state. Structural, chemical, and physical properties of engineering materials with emphasis on ceramics, polymers, and composite materials. (Lec. 3) Pre: CHM 101, 103, or 191, or permission of chairperson. Brown

438 Failure Analysis and Prevention (II, 3) Failure analysis of engineering components. Examples of overload, fatigue, creep, corrosion, and electrical failures in metals, glasses, ceramics, composites, polymers, concrete, and semiconductors. Case studies, microscopic techniques, and prevention are emphasized. (Lec. 3) Pre: 332, 333, or 437. Brown or Gregory

447 (or FSN 447) Food Engineering (I, 4) Basic principles underlying unit operations of chemical engineering applied to food industries. Topics covered include heat transfer, fluid flow, extraction, and drying. (Lec. 3, Lab. 3) Pre: CHM 228, PHY 112, MTH 109, and permission of instructor. Not for major credit in chemical engineering. Barnett

464 Industrial Reaction Kinetics (I, 3) Modeling of simple chemical-reacting systems; computation of design parameters to satisfy system constraints and typical restraints (e.g., product rate and distribution) and conditions of optimality. (Lec. 3) Pre: 314 and CHM 432. Rivéro

491, 492 Special Problems (I and II, 1–6 each) Advanced work under the supervision of a staff member arranged to suit the individual requirements of the student. (Independent Study) Pre: permission of chairperson. May be repeated for a maximum of 12 credits. Not for graduate credit in chemical engineering. Staff

501, 502 Graduate Seminar (I and II, 1 each)

513 Advanced Chemical Engineering Thermodynamics (I, 3)

530 Polymer Chemistry (I, 3)

531 Polymer Engineering (I or II, 3)

532 Ceramic Engineering (I, 3)

533 Engineering Metallurgy (II, 3)

534 (or OCE 534) Corrosion and Corrosion Control (II, 3)

535 (or OCE 535) Advanced Course in Corrosion (I, 3)

537 (or OCE 537) Advanced Materials Engineering (II, 3)

539 Electron and Light Microscopy of Solids (I, 3)

540 Phase Equilibria (II, 3)

541 Transport Phenomena I (I, 3)

542 Advances in Interfacial Phenomena (I, 3)

548 (or FSN 548) Separations for Biotechnology (II, 3)

- 560 Chemical and Physical Processes of Integrated Circuit Fabrication (I, 3)
 573 Mechanical Metallurgy (I or II, 3)
 574 Biochemical Engineering I (I, 3)
 591, 592 Special Problems (I and II, 1–6 each)

Chemistry (CHM)

Chairperson: Professor W. Nelson

099 Basic Chemistry Lecture (I, 3) Part one of a two-semester 101 sequence designed for students who need additional work in problem-solving skills. Successful completion of part one leads to a special section of 101 in the second semester. (Lec. 3) *Not for General Education or program credit. S/U credit.* J. Vitimberga, Fasching

100 Chemistry of Our Environment (I and II, 3) Elementary chemistry for nonscience majors, emphasizing chemical aspects of the human environment. Chemistry of the biosphere, pollution, and aspects of industrial chemistry. (Lec. 3) Zoski, P. Brown, Yang, or Fisher (N)

101 General Chemistry Lecture I (I and II, 3) Fundamental concepts and principles in atomic structure, energy relationships, and reaction mechanisms balanced with applied and descriptive materials. (Lec. 3) *Not open to students with credit in 103 or 191.* J. Vitimberga, Forcé, or Fasching (N)

102 Laboratory for Chemistry 101 (I and II, 1) Experimental work illustrating certain concepts and principles of general chemistry. Experiments in solution, reaction rates, enthalpy, molar heat capacity, and electrochemistry. (Lab. 3) *Pre: credit or concurrent enrollment in 101.* Staff (N)

103 Introductory Chemistry Lecture (I, 3) One-semester general chemistry course designed for students whose curriculums require the one-semester organic chemistry course, 124. (Lec. 3) *Not open to students with credit in 101 or 191.* Fisher (N)

105 Laboratory for Chemistry 103 (I, 1) Fits course content of 103. (Lab. 3) *Pre: credit or concurrent enrollment in 103.* Staff (N)

112 General Chemistry Lecture II (I or II, 3) Elementary thermodynamics, chemical equilibrium in aqueous solutions, properties and reactions of inorganic species, practical applications of chemical principles. (Lec. 3) *Pre: 101 or permission of instructor. Not open to students with credit in 104.* C. Brown, Kirschenbaum, Nelson, or Euler (N)

114 Laboratory for Chemistry 112 (I or II, 1) Semimicroqualitative analysis and its applications. (Lab. 3) *Pre: credit or concurrent enrollment in 112.* Staff (N)

124 Introduction to Organic Chemistry (I and II, 3) Elementary principles of organic chemistry with emphasis on aliphatic compounds, especially those of physiological significance such as amino acids and proteins, carbohydrates, fats, and waxes. (Lec. 2, Lab. 3) *Pre: 101, 102 or 103, 105, and concurrent enrollment in 126 required when curriculum specifies laboratory. Not open to chemistry or chemical engineering majors.* Dain or Fisher (N)

126 Laboratory for Chemistry 124 (I and II, 1) Introduction to chemistry procedures, with emphasis on properties of substances of physiological significance. (Lab. 3) *Pre: credit or concurrent enrollment in 124. Not open to chemistry or chemical engineering majors.* Staff

191 General Chemistry (I, 5) Includes descriptive inorganic chemistry, qualitative analysis, and an introduction to quantitative analysis. Recommended for students in the chemistry curriculum who have had a year of high school chemistry. (Lec. 5) *Not open to students with credit in 101 or 103.* Kirschenbaum (N)

192 General Chemistry (II, 5) Continuation of 191. (Lec. 5) Zoski (N)

212 Quantitative Analysis (I, 4) Principles of gravimetric and volumetric analysis with detailed attention to solution of stoichiometric problems. Laboratory analysis of representative substances by gravimetric or volumetric procedures. (Lec. 3, Lab. 3) *Pre: 112 and 114.* Fasching

226 Organic Chemistry Laboratory (I and II, 2) Common techniques and typical preparative methods in both aliphatic and aromatic series. (Lab. 6) *Pre: concurrent enrollment in 228. Not open to students with credit in 229 or 230.* Staff

227 Organic Chemistry Lecture I (I or II, 3) General principles and theories with emphasis on classification, nomenclature, methods of preparation, and characteristic reactions of organic compounds in aliphatic series. (Lec. 3) *Pre: 112 and 114 or 192.* B. Vitimberga and Staff

228 Organic Chemistry Lecture II (I or II, 3) Continuation of 227 with emphasis on the aromatic series. (Lec. 3) *Pre: 227.* B. Vitimberga and Staff

229 Organic Chemistry Laboratory I (SS, 1) Common techniques and typical preparative methods in aliphatic series. (Lab. 3) *Pre: credit or concurrent enrollment in 227.* B. Vitimberga

230 Organic Chemistry Laboratory II (SS, 1) Continuation of 229 with emphasis on the aromatic series. (Lab. 3) *Pre: 229 or equivalent and credit or concurrent enrollment in 228. Only for students requiring a second credit of organic laboratory.* B. Vitimberga

291 Organic Chemistry (I, 4) Development of principles and theory through an examination of structure, nomenclature, and reactions of organic compounds. (Lec. 3, Lab. 3) *Pre: 192 or permission of instructor. Not open to students with credit in 227.* Rosen

292 Organic Chemistry (II, 4) Continuation of 291 with extension to several additional families of compounds. (Lec. 3, Lab. 3) *Pre: 291. Not open to students with credit in 228.* Rosen

335 Physical Chemistry Laboratory (I, 2) Physical chemical properties of gases, liquids, and solutions; electrochemical cells; phase diagrams of binary and ternary systems; and chemical kinetics. Designed for chemistry majors. (Lab. 4) *Pre: 431. May be taken concurrently with 431.* Freeman or Yang

353, 354 Undergraduate Research (I and II, 1–6 each) Methods of approach to a research problem. Literature, laboratory work, and a report of an original problem or problems. (*Independent Study*) *Pre: permission of instructor. May be repeated for a maximum of 12 credits.* Staff

401 Intermediate Inorganic Chemistry (I, 3) Principles of inorganic chemistry broadly related to structure and reactivity. Many-electron atoms bonding theories, acid-base concepts, coordination chemistry, reaction mechanisms. (Lec. 3) *Pre: 432.* Nelson

402 Physical Inorganic Laboratory (II, 2) Synthesis of inorganic compounds emphasizing inert atmosphere and vacuum line techniques; characterization by spectroscopic and electro-mechanical techniques. (Lab. 6) *Pre: 401.* Euler

412 Instrumental Methods of Analysis (II, 3) Theory and application of optical and electrical instruments to solution of chemical problems: flame photometry, emission spectroscopy, ultraviolet, visible, and infrared spectrophotometry, colorimetry, turbidimetry, nephelometry, fluorometry, potentiometry, voltametric titration methods. (Lec. 3) *Pre: 228 and credit or concurrent enrollment in 432.* C. Brown

414 Instrumental Methods of Analysis Laboratory (II, 2) Applications of instrumental methods to the solution of problems in analytical chemistry. (Lab. 6) *Pre: credit or concurrent enrollment in 412.* Forcé

425 Qualitative Organic Analysis (I, 2) Methods of identification of pure organic compounds. Separation of mixtures and identification of components by infrared and nuclear magnetic resonance spectroscopy. (Lab. 6) *Pre: 292 or equivalent and credit or concurrent enrollment in 427.* Rosen

427 Intermediate Organic Chemistry (I, 3) Intermediate organic chemistry with emphasis on organic reaction mechanism, stereochemistry, spectroscopic characterization, and newer synthetic methods. (Lec. 3) *Pre: 226, 228, or 292.* Rosen and Traficante

431 Physical Chemistry I (I, 3) Gas laws, laws of thermodynamics, chemical equilibrium, phase equilibria, and electrochemistry. (Lec. 3) Pre: 112 or 192; MTH 142; and PHY 111 and 112 or PHY 213, 214, 285, 286. May be taken for graduate credit by graduate students whose undergraduate programs do not require physical chemistry. Freeman or Yang

432 Physical Chemistry II (II, 3) Atomic theory, quantum chemistry, bonding, molecular interactions, chemical kinetics, kinetic theory, and spectroscopy. (Lec. 3) Pre: 431. May be taken for graduate credit by graduate students whose undergraduate programs do not require physical chemistry. Freeman or Yang

436 Laser Spectroscopy Laboratory (II, 2) Applications to spectroscopy. Includes topics on optics, laser characteristics, and laser spectrometers as well as spectroscopic techniques. Designed for science and engineering majors. (Lab. 4) Pre: 101 and 112 or CHM 191 and 192 and PHY 111 and 112 or permission of instructor. Not for graduate credit for graduate students in chemistry. Forcé

492 Seminar in Chemistry (II, 1) Preparation and presentation of papers on selected topics in chemistry. Required of seniors in chemistry. (Seminar) Pre: prior or concurrent enrollment in 432. Not for graduate credit. Staff

501 Advanced Inorganic Chemistry I (I, 3)

502 Advanced Inorganic Chemistry II (II, 3)

504 Physical Methods of Inorganic Chemistry (II, 3)

511 Advanced Analytical Chemistry I (I, 3)

512 Advanced Analytical Chemistry II (II, 3)

518 Radiochemistry (II, 3)

519 Theoretical Concepts in NMR (I, 3)

520 Interpretation of One-Dimensional NMR Spectra (II, 3)

521 Advanced Organic Chemistry I (I, 3)

522 Advanced Organic Chemistry II (II, 3)

524 Interpretation of Two-Dimensional NMR Spectra (II, 3)

531 Advanced Physical Chemistry I (I, 3)

532 Advanced Physical Chemistry II (II, 3)

Chinese (CHN)

Chairperson: Professor Grandin (Modern and Classical Languages and Literatures)

101 Beginning Chinese I (I and II, 3) Fundamentals of grammar and pronunciation, exercises in reading, writing, and conversation. (Lec. 3) Pre: no prior Chinese is required. Staff (F)

102 Beginning Chinese II (I and II, 3) Continuation of 101. (Lec. 3) Pre: 101 or equivalent. Staff (F)

103 Intermediate Chinese I (I and II, 3) Development of facility in reading narrative and expository prose; exercise in grammar, listening comprehension, and speaking. (Lec. 3) Pre: 102 or equivalent. Staff (F)

104 Intermediate Chinese II (I and II, 3) Continuation of 103. (Lec. 3) Pre: 103 or equivalent. Staff (F)

Civil and Environmental Engineering (CVE)

Chairperson: Professor Urish

216 Introduction to Civil and Environmental Engineering Systems (I, 3) Introduction to a wide range of civil and environmental engineering topics. Emphasis on application of mathematical techniques and computer programming to the solution of problems. (Lec. 2, Lab. 3) Pre: MTH 141 and CSC 201. Staff

220 Mechanics of Materials (I and II, 3) Theory of stresses and strains; thin-walled cylinders, beam deflections, columns, combined bending and direct stresses, joints, and indeterminate beams. (Lec. 3) Pre: MCE 162. Staff

315 Surveying I (I, 3) Theory and practice of plane surveying including use, care, and adjustment of surveying instruments, boundary surveys, horizontal and vertical curves, earthwork, and topography. (Lec. 2, Lab. 3) Pre: MTH 141. Offered in fall of even-numbered years. Staff

322 Civil Engineering Laboratory (I and II, 2) Properties and behavior of engineering materials. Directed work in concrete and experimental stress analysis. Independent student projects. (Lab. 6) Pre: 220. Staff

334 Construction Planning and Specifications (I, 3) Introduction to construction planning; procedures involved in construction activities with major emphasis on heavy construction. (Lec. 3) Pre: 220. Offered in fall of odd-numbered years. Staff

347 Highway Engineering (II, 4) Principles of design of modern highways and streets including administrative and economic considerations; bituminous materials, pavements, geometric layout, drainage, construction, and maintenance. (Lec. 3, Lab. 3) Pre: 216. Lee

352 Structural Analysis I (I, 3) Structural systems: beams, frames, trusses; conjugate beam, virtual work, general method for indeterminate structures. Introduction to matrix methods. (Lec. 3) Pre: 220. Staff

353 Structural Analysis II (II, 3) Energy methods, slope deflection, moment distribution, influence lines, stability, matrix methods. Introduction to finite elements. (Lec. 3) Pre: 352. Staff

370 Hydraulic Engineering (II, 4) Applied hydraulics of flow in closed conduits and open channels. River and groundwater hydraulics. Analysis of hydraulic structures. Reservoir design. Principles of hydrology. (Lec. 3, Lab. 3) Pre: MCE 354. Wright

374 Environmental Engineering (I, 4) Urban water supply and treatment systems, sewerage treatment of municipal and industrial waste waters, stream pollution, air pollution, and disposal of solid waste materials. Methods of laboratory analysis for water and wastewater physical and chemical parameters. (Lec. 4) Pre: MTH 243 or permission of chairperson. Thiem

381 Geotechnical Engineering (I, 4) Engineering properties of soils, seepage, consolidation theory, calculation of stresses, failure theories, shear strength of sand, shear strength of clay. Laboratory studies of physical properties, compaction, seepage, consolidation, and shear strength. (Lec. 3, Lab. 3) Pre: 220 and credit or concurrent enrollment in MCE 354. Kovacs, Silva, and Veyera

391 Honors Work (I and II, 3) Independent study under close faculty supervision. Discussion of advanced topics in civil engineering in preparation for graduate work. (Independent Study) Pre: junior standing or permission of chairperson. Staff

396 Civil Engineering Analysis (II, 3) Problems from several fields of civil and environmental engineering solved by numerical methods with particular emphasis on use of electronic digital computers. Computer assignments in the area of each student's interest. (Lec. 2, Lab. 3) Pre: 216. Marcus

397 Introduction to Civil Engineering Design (I, 1) Preliminary planning for the integrated design project. Field trips and presentations by practicum engineers. (Lab. 3) Required of all juniors in civil and environmental engineering. Staff

442 Traffic Engineering (I, 3) Highway traffic characteristics and methods of providing for an effective, free, and rapid flow of traffic. Types of studies, regulations, control devices and aids, planning and administration. (Lec. 2, Lab. 3) Pre: 347 or permission of instructor. Lee

446 Transportation Engineering (II, 3) Transportation planning and design, technological characteristics and design considerations of major transportation systems. (Lec. 3) Pre: 347 or permission of instructor. Lee

453 Computer Analysis of Structures (I, 3) Introduction to matrix methods of structural analysis. Solutions of planar structures using a digital computer. (Lec. 3) Pre: 353 and 396. Staff

460 Analysis and Design of Metal Structures (II, 3) Properties of metal; current design codes; practice for the design of steel structural components; simplified and computer-oriented methods of analysis and design. Nonlinearities. Comprehensive design problems. (*Lec. 2, Lab. 3*) *Pre: 352. Not for graduate credit in civil and environmental engineering.* Staff

465 Analysis and Design of Concrete Structures (I, 3) Current criteria and practice for design of reinforced and prestressed concrete structures. Elastic and ultimate strength analysis of beams, slabs, columns, and frames. Comprehensive design problems. (*Lec. 2, Lab. 3*) *Pre: 353. Not for graduate credit in civil and environmental engineering.* Staff

470 Water and Wastewater Transport Systems I (II, 3) Computer analysis of water storage and transmission. Design of water distribution and wastewater collection systems. (*Lec. 2, Lab. 3*) *Pre: 370 or 374 or permission of instructor.* Thiem

471 Water and Wastewater Treatment Systems II (I or II, 3) Development of water quality standards. Design and analysis of physical, chemical, and biological treatment processes and their application to water and wastewater purification systems. (*Lec. 2, Lab. 3*) *Pre: 374 or permission of instructor.* Staff

472 Industrial Air Pollution (I or II, 3) Sources and characteristics of urban-industrial air pollution, allowable concentrations and control, stack sampling, chemical supplements in air pollution control, diffusion of pollutants, site selection and abatement programs. Air resources management programs. (*Lec. 3*) *Pre: permission of chairperson.* Staff

474 Water Quality Sampling and Analysis (II, 3) Laboratory and field work including sampling of surface and groundwater, chemical and biological analyses for water; monitoring, treated effluent quality control, and detection of hazardous contaminants. (*Lec. 1, Lab. 6*) *Pre: 374 or permission of instructor. Offered in spring of odd-numbered years.* Thiem

475 Water in the Environment (II, 3) Evaluation of water as a resource and its relation to the environment: hydrologic cycle, water budgets, water uses, drought, flood, current water problems. (*Lec. 3*) *Pre: MTH 243 and CVE 374 or permission of instructor. Offered in spring of even-numbered years.* Urish

478 Hazardous Waste Disposal and Solid Waste Management (I or II, 3) Sources, collection, treatment, and disposal of hazardous wastes and solid wastes. Conservation, recovery, and reuse of material. Economics of waste treatment, disposal, and reuse. (*Lec. 3*) *Pre: junior standing or permission of chairperson.* Poon

483 (or OCE 483) Foundation Engineering (II, 3) Applications of geotechnical engineering principles to analysis and design of shallow foundations. Topics include foundation types, bearing capacity, settlement analysis, shallow foundations, earth pressures, retaining walls, introduction to deep foundations. (*Lec. 2, Lab. 3*) *Pre: 381. Kovacs, Silva, and Veyera*

485 Engineering Geophysics
See Geology 485.

491, 492 Special Problems (I and II, 1–6 each)
Advanced work under supervision of a staff member arranged to suit the individual requirements of the student. (*Independent Study*) *Pre: permission of chairperson. May be repeated for a maximum of 12 credits.* Staff

495 Civil and Environmental Engineering Systems (I, 3) Civil and environmental engineering projects are studied, analyzed, designed, and discussed in areas of water resources, pollution control, geotechnics, structures, and transportation using systems techniques. (*Lec. 3*) *Pre: senior or graduate standing in civil and environmental engineering.* Marcus

497 Civil Engineering Design I (I, 2) Detailed project planning, conceptual design and layout, environmental impact. Detailed project planning, conceptual design project. Speakers on ethics and professionalism. (*Lab. 4*) *Pre: 397 and senior standing. Must be taken immediately prior to 498. Required of all seniors in civil and environmental engineering. Not for graduate credit.* Staff

498 Civil Engineering Design II (II, 3) Elements of planning, design, and analysis of a civil engineering project integrating the principles learned in previous courses; a group project involving all major aspects of civil engineering design. (*Lec. 3*) *Pre: 397, 497, and senior standing. Not for graduate credit.* Staff

545 Pavement Design (I, 3)

546 (or CPL 546) Urban and Rural Transportation (I, 3)

547 Geometric Design of Highways (I, 3)

548 Pavement Materials and Mix Design (II, 3)

551 Finite Element Analysis in Civil Engineering (I or II, 3)

556 Variational Methods in Structural Engineering (I, 3)

560 Structural Design (I or II, 3)

561 Advanced Steel Design (I, 3)

565 Structural Dynamics (I or II, 3)

568 (or MCE 568) Theory of Plates (I or II, 3)

570 Sanitary Chemistry (I, 3)

571 Sanitary Chemistry Laboratory (II, 3)

572 Biosystems in Sanitary Engineering (I or II, 3)

573 Theory of Water Purification and Treatment (I, 3)

575 Open-Channel Hydraulics (I or II, 3)

581 (or OCE 581) Experimental Geomechanics (I or II, 3)

582 (or OCE 582) Seabed Geotechnics (I or II, 3)

583 (or OCE 583) Advanced Foundation Engineering (I or II, 3)

584 Designing with Geosynthetics (I or II, 3)

585 Soil Dynamics (I or II, 3)

587 Groundwater Flow and Seepage Pressures (II, 3)

588 Groundwater Hydrology (II, 3)

591, 592 Special Problems (I, 1–6 each)

596 Numerical Methods in Structural Engineering (I or II, 3)

Classics (CLA)

Section Head: Associate Professor Suter

391 Ancient Laughter: The Comic Tradition in Greece and Rome (I or II, 3) Introduction to the comic tradition in Western literature through its origins in Greece and Rome. Readings in English translation include examples of comic drama, novel, and satire. (*Lec. 3*) Suter (A) (F)

395 Greek Mythology: Gods, Heroes, and Humans (I and II, 3) Nature and function of myth in the ancient world and today: ideas of divinity, relationship of divine to human, origins of cosmos and human society, male and female principles, power hierarchies, coming of age, the heroic experience. Theories of myth analysis. Readings in English translation. (*Lec. 3*) Suter (A) (F)

396 Myths of Rome (I and II, 3) Nature and function of myth in Roman society; origins and influence of Romanitas as found in Roman literature: history, epic, lyric, novel. Roman religion: magic, animism, anthropomorphism, gods and goddesses. Readings in English translation. (*Lec. 3*) Suter (A) (F)

397 Greek Myth and Tragedy (I or II, 3) Relationship between Greek myth and classical tragedy, birth and evolution of tragedy (ancient, French, English, American), employment of the same myth for different dramatic and political purposes. Readings in English translation. (*Lec. 3*) Suter (A) (F)

See also course listings under GRK and LAT for Greek and Latin language offerings.

Communication Skills (CMS)

101 College Communication Skills (I and II, 6)
An integrated, interdisciplinary approach to the acquisition of communication skills. Instruction given in composition and oral communication utilizing a theoretical model common to both. (*Lec. 6*) *Not open to students with credit or concurrent enrollment in COM 101 or WRT 101.* Schwegler, Martin, and Brownell (Cw) (C)

Communication Studies (COM)

Chairperson: Associate Professor S. Wood

101 Fundamentals of Oral Communication (*I and II, 3*) Development and improvement of fundamentals and attitudes essential to effective and ethical communication. Preparation, organization, and presentation of the fundamentals in various speaking environments. Students demonstrating proficiency may petition for advanced placement. (*Lec. 3*) *Not open to students with credit or concurrent enrollment in CMS 101.* Staff (C)

103 Interpersonal Communication (*I and II, 3*) Impact of perception, listening, self-acceptance, nonverbal messages, and language on interpersonal communication. Emphasis on improving skills. (*Lec. 3*) Staff (C)

200 The Art of Human Communication (*I and II, 3*) Selected communication theories from classical to contemporary times are examined. Focus on the relationship between cultures and communication theories. Emphasis on application of theoretical principles to contemporary communication situations. (*Lec. 3*) Staff (L)

205 Great American Speeches (*I and II, 3*) The study of historically significant ideas, issues, and causes through the critical analysis of selected American speeches. (*Lec. 3*) Staff (L)

206 Speech Communication Survey (*I and II, 3*) Survey of the major areas within the field of speech communication. Emphasis on developing the student's ability to identify, define, formulate, investigate, and describe problems and phenomena within the discipline. (*Lec. 3*) Staff

210 Persuasion: The Rhetoric of Influence (*I and II, 3*) Analysis of communication influencing beliefs, attitudes, and/or behavior. Investigation of rhetorical elements of logical, emotional, and ethical appeals. Study of elements critical for effective producers and consumers of persuasion. (*Lec. 3*) Staff (L)

215 Argumentation and Debate (*I and II, 3*) Introduces argumentation theory through the model of academic debate. Stresses critical-thinking skills including analysis, research, organization, and written and oral presentations. Debates are conducted on important social and political issues. (*Lec. 3*) Staff

216 Forensic Workshop (*I and II, 1*) Open to students participating in speech or debate activities. (*Practicum*) *Pre: permission of the director of debate. May be repeated for a maximum of 4 credits.* Staff

220 Communication in the Small Group (*I and II, 3*) The study of communicative functions in the small group setting. Includes group dynamics, leadership, problem solving, and decision making. Emphasis on theory and application. (*Lec. 3*) Schultz and Staff (S)

231 Oral Interpretation of Literature (*I and II, 3*) Recognition and appreciation of content and communication of thought and emotion through oral reading. Practice in the analysis and interpretation of poetry and prose fiction. (*Lec. 3*) Quainoo (A)

301 Systems of Communication (*II, 3*) Investigation of communication networks in non-symbolic and symbolic systems, focusing on general systems theory, cybernetics, the human physiological system, the computer, and animal and human code systems. (*Lec. 3*) Brownell

302 Advanced Public Speaking (*I and II, 3*) Advanced study of public speaking and speech writing. Speaking in television and business settings. Speaking with a manuscript, writing speeches for others, and speech criticism. (*Lec. 3*) *Pre: 101.* Devlin and Wood

306 Research Methods in Communication (*I and II, 3*) Basic concepts and techniques of communication research. Emphasis on analysis of existing communication research and on application of research processes to communication problems or phenomena. (*Lec. 3*) *Pre: 206 or permission of instructor.* Anderson, Chen, Ketrow, Mundorf, and Schultz

310 Contemporary Oral Communication (*I and II, 3*) Analysis of contemporary rhetorical theories as they relate to speaking in business, civil rights, education, government, labor, law, and religion. Focus each semester on a critical contemporary issue. (*Lec. 3*) *May be repeated for credit.* Staff

314 Nonverbal Communication (*I, 3*) Examines nonverbal communication codes, including their structures, usages, and interrelationships. Stresses student understanding, analysis, and application of nonverbal communication through lecture, discussion, and experiential activities. (*Lec. 3*) *Pre: junior standing and 101 or 103 or permission of instructor.* Staff

315 Environmental Dimensions of Communication (*I, 3*) Investigation of the physical properties of the environment and how individuals' perception and design of these properties affect their communication in personal, social, and public situations. Analysis and experimentation with the ways the environment can be used to facilitate communication. (*Lec. 3*) Anderson and Brownell

317 Advanced Argumentation and Debate (*II, 3*) Analysis of the theories of argumentation through specialized forms of debate. Use of legislative, legal, and other situationally specific forms of debate to apply the theories of argumentation. (*Lec. 3*) Wood

320 Oral Communication for Business and Professions (*I or II, 3*) Examination of business and organizational communication. Emphasis on channels of communication, communica-

tion barriers, leadership, and the development of communication skills for business and professions. (*Lec. 3*) Ketrow, Doody, and Staff

331 Contemporary Approaches to Prose Fiction (*II, 3*) Oral interpretation of the short story and novel. Contemporary approaches to the oral tradition of storytelling through individual and group performances and written analysis. (*Lec. 3*) Quainoo

332 Oral Interpretation of Poetry (*I, 3*) Practice in the oral interpretation of poetry through oral performance and written analysis. (*Lec. 3*) *Pre: 231 or permission of instructor. In alternate years. Next offered 1994-95.* Quainoo

333 Oral Interpretation of Black Literature (*II, 3*) Study and oral presentation of literature by black American authors. Class performances, discussion, reports, and analysis of the literature. (*Lec. 3*) Quainoo

337 Intercultural Communication (*I and II, 3*) Study of cultural similarities and differences as they affect communication within and across cultural boundaries. (*Lec. 3*) Doody and Chen

340 Electronic Media Programming (*I or II, 3*) Overview of various aspects of the operation of radio, television, and cable TV, including industry structure, audience measurement (ratings), programming, and promotion. (*Lec. 3*) *Pre: junior standing.* Mundorf

391, 392 Honors Work (*I and II, 1-3 each*) Thesis work or an equivalent independent project under faculty supervision for honors students participating in the University Honors Program. (*Independent Study*) *Pre: admission to departmental Honors Program.* Staff

400 Rhetoric (*I, 3*) Inquiry into standards for the evaluation and improvement of instrumental discourse. Detailed considerations of invention, disposition, and style in oral and written communication. (*Lec. 3*) Bailey

403 Advanced Interpersonal Communication (*I, 3*) Critical study of major issues and theories of interpersonal communication. Focuses on history, models, and research, including conversation, influence, intimacy, language, and relationships. (*Lec. 3*) *Pre: 103 or permission of instructor.* Schultz or Ketrow

415 The Ethics of Persuasion (*II, 3*) Relation of persuasion to ethics is examined. Purposes, means, results, and contexts are considered in making rhetorical judgments of interpersonal, political, and institutional communications. (*Lec. 3*) *In alternate years. Next offered 1994-95.* Bailey

420 Seminar in American Public Address and Criticism (*II, 3*) Study of selected American speakers, speeches, and/or movements. Rhetorical analysis used to measure the impact of speakers, speeches, and movements studies. (*Seminar*) Anderson and Doody

430 Political Communication (I, 3) Analysis of political communication in campaign and nonelection situations. Examination of ghost writing; content analysis, strategies, image making of political speaking; TV and radio presentations; influences on and effects of political communication. (Lec. 3) Devlin

435 Directing Group Performance of Non-dramatic Literature (II, 3) Practice in Reader's Theatre and Chamber Theatre. Emphasis on direction as a rhetorical device in group work with nondramatic literature and compilation of scripts for individual and group performance. (Lec. 3) Pre: 231. In alternate years. Quainoo

440 Telecommunications Processes and Audience Behavior (I and II, 3) Surveys theories and research concerning role of electronic mass media in contemporary society. Focuses on interplay between mass media content and audience behavior; provides framework for analyzing current telecommunications issues. (Lec. 3) Pre: 210 or permission of instructor. Mundorf

450 Organizational Communication (I and II, 3) Surveys theory and practice of communication in organizations. Examines interface of organizational, management, and communication theories. Explores human interaction, flows and formats in organizations; stresses student analysis of organizational communication. (Lec. 3) Pre: 320. Ketrow, Schultz, and Staff

460 Communication and Conflict Intervention (II, 3) An examination of the role of communication theories in conflict intervention in interpersonal, group, and organizational settings. Emphasis on applying theories through simulations, role plays, case studies, and discussions. (Lec. 3) Pre: 103 or 220. Anderson, Doody, or Schultz

471, 472 Internship in Communication Studies (I and II, 1-3 each) Provides the student with direct supervised participation in a variety of communication situations and occupations. (Practicum) Pre: 18 credits in communication studies and permission of chairperson. S/U only. Staff

491, 492 Special Problems (I and II, 1-3 each) Selected areas of study pertinent to oral communication. Instruction may be offered in class seminar or tutorial environments according to specific needs and purposes. (Independent Study) Pre: permission of chairperson. Staff

Communications

Communication Skills

101 College Communication Skills

Communication Studies

101 Fundamentals of Oral Communication
103 Interpersonal Communication
215 Argumentation and Debate
220 Group Discussion
302 Advanced Public Speaking

Journalism

220 Introduction to News Reporting and Writing
320 Public Affairs Reporting and Writing
321 Magazine Article and Feature Writing

Writing

002 Writing Lab
101 Composition
112 English as a Second Language I
122 English as a Second Language II
123 College Writing for Returning Students
201 Intermediate Writing
227 Business Communications
301 Advanced Writing
333 Scientific and Technical Writing

Communicative Disorders (CMD)

Chairperson: Associate Professor Singer

260 Speech Development and Correction (II, 3) Normal development of human speech, causes of speech and hearing disorders, and techniques of speech and hearing rehabilitation. For those in teaching, nursing, guidance, psychology, and education of the physically handicapped and mentally retarded. (Lec. 3) Staff

261 Survey of Hearing and Deafness (II, 3) Introduction to the science of audiology. Pathologies of the hearing mechanism, basic methods of audiometry, interpretation of the audiogram, hearing aids, and rationale and methods in hearing conservation programs. Observations and practice in the Rhode Island Hospital Hearing and Speech Center. (Lec. 3) Staff

372 Auditory and Speech Mechanisms (I, 3) Structure and function of the organs of hearing and speech as they relate to normal and pathological communication; theories of cortical involvements, central and peripheral nervous systems relevant to rehabilitation procedures. (Lec. 3) Pre: junior standing and permission of chairperson. Staff

373 Phonetics (I, 3) International Phonetic Alphabet; analysis of phonetic and phonemic elements in major American English dialects; practice in transcription of standard and defective speech. (Lec. 3) Pre: junior standing. Beaupre and Staff

374 Communication Processes (I, 3) Psychocommunication processes basic to speech; theories of language learning; psychology of hearing and deafness; interrelationships between speech and personality. (Lec. 3) Pre: junior standing. Beaupre

375 Language Development (I, 3) Development phenomena in speech and language; causal factors of delayed speech and language; survey of evaluative and habilitative programs for children with deviant language development. (Lec. 3) Pre: junior standing. Staff

376 Hearing and Speech Science (II, 3) Physical properties and speech signal, analysis of the physical bases of speech production and speech perception. (Lec. 3) Pre: 372 and 6 credits in natural sciences. Staff

378 Introduction to Aural Habilitation and Rehabilitation (II, 3) Effects of hearing loss on human development, the nonmedical remediation of hearing loss, and the application of public laws to the hearing-impaired child. (Lec. 3) Pre: 261 or equivalent. Staff

391, 392 Honors Work (I and II, 1-3 each) Thesis work or an equivalent independent project under faculty supervision for honors students participating in the University Honors Program. (Independent Study) Pre: admission to departmental Honors Program. Staff

465 Clinical Methods in Communicative Disorders (I and II, 4) Observation of diagnosis and treatment of communicative disorders; developing interviewing, report writing, and counseling techniques; introduction to diagnostic procedures; establishing therapeutic goals, treatment, and remediation of various disorders. (Lec. 3, Lab. 2) Pre: 260, 261, and three of the following—372, 373, 374, 375, 376. Not for graduate credit in communicative disorders. Staff

475 Gestural Communication (II, 3) Visual language systems with emphasis on the chelology and syntax of Ameslan, and levels of language among deaf communicators; finger spelling and sign language for educational, rehabilitative, and artistic goals studied. (Lec. 2, Lab. 2) Pre: junior or graduate standing. Beaupre

491, 492 Special Problems (I and II, 1-3 each) Selected areas of study pertinent to communicative disorders. Instruction may be offered in class seminar or tutorial environments according to specific needs and purposes. (Independent Study) Staff

504 Speech and Hearing Research (II, 3)

551 Measurement of Hearing (I, 3)

552 Advanced Measurement of Hearing (II, 3)

553 Pediatric Audiology (I, 3)

554 Rehabilitative Audiology (I, 3)

555 Amplification for the Hearing Impaired (II, 3)

556 Electrophysiological Measures in Audiology (II, 3)

560 Disorders of Phonation (II, 3)

561 Articulation Disorders (I, 3)

564 Language Disorders in School-Aged Children (II, 3)

567 Clinical Practicum in Speech Pathology (I and II, 1-3)

568 Clinical Practicum in Audiology (I and II, 1-3)

569 Diagnostic Procedures (I, 3)

570 Clinical Practicum in Communicative Disorders (I or II, 1-5)

572 Medical Audiology (I, 3)

573 Contemporary Problems in Audiology (II, 3)

- 574 Environmental Audiology (II, 3)
- 577 Speech and Language for Hearing Impaired (II, 3)
- 580 Augmentative Communication (II, 3)
- 581 Cerebral Palsy (I, 3)
- 582 Motor Speech Disorders (II, 3)
- 584 Language Disorders in Developmentally Young Children (I, 3)
- 585 Aphasia and Allied Language Disorders (II, 3)
- 586 Alaryngeal Speech (I, 3)
- 591 Contemporary Issues in Speech and Language Pathology (II, 3)
- 592 Stuttering and Cluttering (I, 3)

Community Planning (CPL)

Director: Professor Feld

- 410 Fundamentals of Urban Planning (II, 3) Survey of urban planning principles, methods, and techniques pertinent to contemporary urban problems. History of city forms and functions and development of urban planning as a profession. Problems and priorities in shaping the future urban environment. (Lec. 3) *Primarily for students not enrolled in the graduate curriculum in community planning and area development.* Foster
- 434 Introduction to Environmental Law (II, 3) Surveys issues arising out of laws designed to protect the environment and manage resources: right to a decent environment, government regulation versus private property rights, citizen participation in planning environmental controls. (Lec. 3) *Primarily for students not enrolled in the graduate curriculum in community planning and area development.* Gordon
- 501 Introduction to Community Planning Practice (I, 3)
- 510 Community Planning and Political and Social Change (II, 3)
- 511 Planning and Natural Environmental Systems (I, 3)
- 512 Spatial and Fiscal Relationships of Communities (I, 3)
- 516 (or MAF 516) Seminar on the Urban Waterfront (I, 3)
- 522 Planning Law (I, 3)
- 523 Planning Theory (I, 3)
- 525 Introduction to Planning Methods (I, 3)
- 526 Planning and Policy Analysis (II, 3)
- 530 Urban Design and Public Policy (II, 3)
- 536 International Comparisons in Urban and Regional Planning (I, 3)
- 537 (or REN 532) Land Resources Economics (I, 3)
- 538 Site Planning (II, 3)
- 539 Environmental Law (II, 3)
- 540 Community-Based Housing (I, 3)
- 541 Urban and Rural Housing Policy (II, 3)
- 542 Housing and Community Development Law (II, 3)
- 543 Methods of Social Policy Analysis (II, 3)
- 545 Land Development Seminar (II, 3)

- 546 (or CVE 546) Urban and Rural Transportation (I, 3)
- 549 Seminar in Ecological Planning (I, 3)
- 555 Introduction to Economic Development Planning (II, 3)
- 591, 592 Special Problems in Planning (I or II, 1-6 each)
- 593-598 Special Problems in Planning (I or II, 1-6 each)

Comparative Literature Studies (CLS)

Coordinator: Professor Leo (English)

- 160 Masterpieces of Literature See English 160.
- 235 (or PHL 235) Modern Thought: Philosophy and Literature (I or II, 3) Introduction to recent thought in philosophy and literature. Emphasis on Kierkegaard, Marx, Nietzsche, Freud, Sartre, and complementary literary texts. (Lec. 3) *Team-taught.* Kuhn and Johnson (L)
- 250 Themes and Myths (I or II, 3) Study of the evolution and transformation of a myth or theme in several national literatures. An introduction to a comparative and interdisciplinary approach. (Lec. 3) *May be repeated for credit as often as topic changes. May be taken once for General Education credit.* Staff (A)
- 335 (or ENG 335) Interdisciplinary Studies in Comparative Literature (I or II, 3) Study of the interrelationships of two or more national literatures (in translation) with another discipline. (Lec. 3) *May be repeated for credit as often as topic changes.* Staff (A)
- 350 (or ENG 350) Literary Theory and Criticism (I or II, 3) Introduction to theories of literature and their application in the analysis of selected texts. (Lec. 3) *May be repeated for credit as often as topic changes.* Staff
- 450 Studies in Comparative Literature (I or II, 3) Detailed study of literary movement, genre, or an aspect of literature as seen in two or more literatures. (Lec. 3) *Pre: 6 credits in literature or permission of instructor. May be repeated for credit as often as topic changes.* Staff
- 510 Introduction to Comparative Literature (I or II, 3)
- 520 Literary Theory and Criticism (I or II, 3)
- 530 Approaches in Comparative Literature (I or II, 3)
- 597 Special Problems (I and II, 1-6)

Computer Science (CSC)

Chairperson: Professor Lamagna

- 101 Computing Concepts (I or II, 3) Capabilities and limitations of computers. Applications of computers in today's society. Overview of computing systems and programs. Students will complete several projects using a computer.

(Lec. 3) *Not open to students who have credit in any college-level computer science course. Not open to computer science majors.* Staff

200 Introduction to Computer Programming for Engineers (I or II, 3) Computer programming in FORTRAN; application to engineering problems. VAX/VMS DCL; noninteractive computer graphics. Designed for engineering students. (Lec. 2, Rec. 1) *Pre: credit or concurrent enrollment in MTH 141. Only one of 200, 201, or 211 may be taken for credit.* Staff

201 Introduction to Computing (I and II, 3) Computer characteristics, algorithms, data representation, program development. Students will write several programs to solve numerical and nonnumerical problems. (Lec. 2, Rec. 1) *Pre: MTH 111 or equivalent. Not for major credit in computer science. Only one of 200, 201, or 211 may be taken for credit.* Staff (M)

205 Computational Methods for Engineers and Scientists (I, 3) Roots of equations and systems of equations, curve fitting, plotting, integration, errors. Students will write several programs to solve numerical problems. (Lec. 3) *Pre: 200, 201 or 211, credit or concurrent enrollment in MTH 142. Not for major credit in computer science.* Staff

211 Introduction to Computer Science I (I and II, 4) Algorithm development, programming and program structure, data representation, organization and characteristics of computers. Students will write several programs to solve numerical and nonnumerical problems. (Lec. 3, Lab. 2) *Pre: prior experience with computers and programming and MTH 111 or equivalent. Only one of 200, 201, or 211 may be taken for credit. Intended for computer science majors.* Staff

212 Introduction to Computer Science II (I and II, 4) Fundamentals of software engineering including programming style, development, testing, maintenance, and evaluation. Structured data types. Data structures and their implementation. Principles of recursion. (Lec. 3, Lab. 2) *Pre: 201 or 211 and MTH 141. Intended for computer science majors.* Staff

301 Fundamentals of Programming Languages (II, 3) Syntactic and semantic issues in programming languages. Topics include scanners, recursive descent parsers, interpreters, direct and continuation semantics, run-time structures, and data abstraction. Several significant programming exercises. (Lec. 3) *Pre: 212.* Staff

311 Machine and Assembly Language Programming (II, 3) Introduction to machine and assembly language programming for a particular computer. Instruction definitions, machine representations of data and instructions, programming techniques. Computer solution to several numerical and nonnumerical problems. (Lec. 3) *Pre: 212.* Staff

312 Advanced Assembly Language Programming (I, 3) Continuation of 311. Subprograms; macro-level input and output, decimal and floating-point representations, conversions between data representations, macro definitions. (Lec. 3) Pre: 311. In alternate years. Next offered fall 1994. Staff

320 Social Issues in Computing (I, 3) Discussion of the social and ethical issues created by the use of computers. The problems that computers solve and those that they produce. Ethics and responsibilities of the computer professional. (Lec. 3) Pre: 212, junior standing, or permission of instructor. In alternate years. Next offered fall 1995. Staff

331 Data Structures (I, 3) Implementation and manipulation of lists, trees, graphs, arrays, and other data structures. Searching and sorting methods. File structures and data management. Data structures in programming languages. (Lec. 3) Pre: 212 and 340 or MTH 447, or CSC 447. Staff

340 Applied Combinatorics (II, 3) Combinatorial techniques used in nonnumerical computation and analysis of algorithms. Topics include enumeration, recurrence relations, graphs and networks. Complexity analysis of several representative problems and algorithms for their solutions. (Lec. 3) Pre: 212 and credit or concurrent enrollment in MTH 215. Staff

402 Compiler Design (I, 3) Grammars and languages; lexical analysis, parsing and translation, symbol tables, run-time storage administration, object code generation. Students will construct a compiler for a small programming language. (Lec. 3) Pre: 301 and 331. Staff

406 Computer Graphics (II, 3) Interactive raster graphics; hardware, software, and algorithms. Point plotting, line-drawing, geometrical transformations, clipping and windowing. Three-dimensional graphics including curves, surfaces, perspective, hidden objects, shading. User interfaces; graphical programming environments. (Lec. 2, Lab. 2) Pre: 331 and MTH 215 and 243. Staff

411 Computer Organization (I, 3) Logical structure of computer systems viewed as a hierarchy of levels. Topics include digital logic, microprogramming, processor organization, addressing techniques, instruction sets, virtual memory, assemblers, linkers, and loaders. (Lec. 3) Pre: 311. Staff

412 Operating Systems (II, 3) Presentation of the general concepts underlying operating systems. Topics include process management, concurrency, scheduling, memory management, information management, protection and security, modeling and performance. (Lec. 3) Pre: 311 and 331. Staff

420 Software Engineering (II, 3) Programming environments and methodologies for the design, development, testing, and maintenance of large software systems. Students will participate in an extensive software development project. (Lec. 3) Pre: 301 and 331. In alternate years. Next offered spring 1996. Staff

436 Database Management Systems (I, 3) Concepts and theory of structuring and managing large data systems; semantic modeling; relational, hierarchical, and network approaches to database organization; concurrency control; distributed systems; security and integrity. (Lec. 3) Pre: 331. Staff

440 Design and Analysis of Algorithms I (I, 3) Algorithm design and analysis techniques; inherent computational complexity. Fast algorithms for sorting and searching, string pattern matching, polynomial and matrix calculations, properties of graphs and networks. NP-completeness and intractability. (Lec. 3) Pre: 331. Staff

445 Formal Languages and Automata Theory (II, 3) Abstract models of computation; deterministic and nondeterministic machines. Grammars and formal languages. Finite state machines and regular expressions; pushdown automata and context-free languages; Turing machines. Effective computability and unsolvable problems. (Lec. 3) Pre: 340. In alternate years. Next offered spring 1995. Staff

447 Discrete Mathematical Structures
See Mathematics 447.

450 Fundamentals of Numerical Computation (II, 3) Finite precision arithmetic, errors and pitfalls in computations, recursive and iterative processes, built-in functions, using available software. Survey of classical algorithms with emphasis on application, use, and interpretation of results. (Lec. 3) Pre: 212 and MTH 215 and 243. In alternate years. Next offered spring 1996. Staff

481 Artificial Intelligence (II, 3) Theories, formalisms, techniques to emulate intelligent behavior using information processing models. Symbol programming, search, problem solving, knowledge-based techniques, logic, theorem proving. Optional topics: natural language processing, machine learning, computer vision. (Lec. 3) Pre: 301 and 331 or permission of instructor. In alternate years. Next offered spring 1995. Staff

491 Directed Study in Computer Science (I and II, 1-3) Advanced work in computer science. Conducted as supervised individual projects. (Independent Study) Pre: permission of chairperson. S/U credit. Staff

492 Special Topics in Computer Science (I or II, 3) Advanced topics of current interest in computer science. (Lec. 3) Pre: permission of instructor. Staff

501 Programming Language Semantics (I, 3)

502 Theory of Compilers (II, 3)

511 Advanced Computer Organization (I, 3)

512 Topics in Operating Systems (II, 3)

517 Design and Analysis of VLSI Systems (I, 3)

525 (or IME 525) Simulation (II, 3)

541 Design and Analysis of Algorithms II (I, 3)

542 Mathematical Analysis of Algorithms (I, 3)

544 Theory of Computation (II, 3)

547 (or MTH 547) Combinatorics and Graph Theory (I, 3)

548 (or MTH 548) Topics in Combinatorics (II, 3)

550 Advanced Numerical Computation (II, 3)

581 (or ELE 581) Special Topics in Artificial Intelligence (II, 3)

583 (or ELE 583) Computer Vision (I, 3)

591 Directed Study in Computer Science (I and II, 1-3)

592 Special Topics in Computer Science (I or II, 3)

Consumer Studies (CNS)

210 Management in Family Living (I and II, 3) Interaction of resources, goals, and managerial processes in the home seen in the context of the larger community. Applications primarily in the area of human resources. (Lec. 3) Pre: sophomore standing or permission of chairperson. Noring

220 Consumer in the Economy (I and II, 3) Application of basic economic principles to consumer problems in a complex marketplace, buyer-seller relationships, effective consumer decision making, effects of government policies on consumers. (Lec. 3) Pre: economics course. Anderson (S)

320 Personal Finance (I and II, 3) Personal financial planning and decisions for attaining individual and family goals. Factors which affect, protect, and enhance financial security. (Lec. 3) Pre: junior standing. Anderson.

321 Personal Finance Applications (II, 3) Application of principles of family-financial planning and decision making. Emphasis on mathematical and analytical evaluation and analysis including the use of computer software. (Lec. 3) Pre: 320. Xiao

340 Family Housing (I, 3) Evaluation and study of types of housing in relation to the family and community. Emphasis on socioeconomic factors, housing laws, and aesthetic qualities concerned with housing. (Lec. 3) Noring